

European Rates Weekly

The nuances of the ECB delivery

- **The ECB set market expectations & then delivered on consensus €30bn x 9m. More than meets the eye: No QE 'sudden stop' infers potential QE through 2018. Now favors carry. Reinvestments in same jurisdictions during net asset purchase period. Constructive ambiguity about capital key fudges thereafter mean long periphery. The bearish tilt is lower EGB buying in APP, but that's only likely to work into 2018.**
- **Periphery spreads – as you were:** In the end, it was Spanish headline risk that governed much of the tighter periphery tone on the day of the ECB. We believe the near-term spread outlook has become more benign (not least on likely PSPP front-loading) but remain cognizant of net supply dynamics and political risks into 2018.
- **MPC hikes – none, one or some?** The market is 90% priced for a 25bp hike next Thursday, but may be underestimating the prospect of a cycle. The MPC is likely to hike and maintain a hawkish bias in our view. That makes us bearish into the meeting. Longer-term, 2s10s flatteners still offer the best risk-reward on Brexit risk.
- **Euro inflation – trading supply:** Supply forecasts for the rest of 2017 with a relative value overlay highlight the richness of OATi28 on the real yield curve. In the front-end, OATe121, BTPe122 and SPGBei21 are all likely to be re-opened before year-end and look rich vs Bunde123 and BTPe123 in break-even terms.
- **EUR 30y tail payer swaption skews looking cheap:** short positions in 1x2 1y30y payer swaption spreads provide attractive tactical hedges vs. higher level of rates.
- **SSA outlook increasingly benign for Q4:** Evolving net supply dynamics may become important for 2018, but for now, likely PSPP front-loading and waning issuance paint a relatively benign SSA spread outlook for the rest of Q4 in our view.
- **Supply:** EGB supply next week is scheduled from Italy (5/10/CCTeu), France (>7yr) and Spain (Bono/SPGBei).

Harvinder Sian^{AC}
+44-20-3569-4265
harvinder.sian@citi.com

Jamie Searle^{AC}
+44-20-7986-9493
jamie.searle@citi.com

Matteo Regesta^{AC}
+44-20-7986-9101
matteo.regesta@citi.com

Peter Goves^{AC}
+44-20-7986-3215
peter.goves@citi.com

Michael Spies^{AC}
+49-69-1366-8403
michael.spies@citi.com

Aman Bansal, CFA^{AC}
+44-20-7986-1007
aman.bansal@citi.com

Andrea Appeddu^{AC}
+44-20-7986-9224
andrea.appeddu@citi.com

Puja V Sawant^{AC}
+91-22-4277-5085
puja.sawant@citi.com

Saumesh Dutta^{AC}
+91-22-4277-5021
saumesh.dutta@citi.com

See Appendix A-1 for Analyst Certification, Important Disclosures and non-US research analyst disclosures.

Citi Research is a division of Citigroup Global Markets Inc. (the "Firm"), which does and seeks to do business with companies covered in its research reports. As a result, investors should be aware that the Firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision. Certain products (not inconsistent with the author's published research) are available only on Citi's portals.

Harvinder Sian
Aman Bansal

Nuances in the ECB consensus result

The ECB set market expectations of €30bn for 9-months and then delivered, with a few nuances. We previously thought the market was fully priced for a delayed hike reflecting the forward guidance on rates rising only 'well past' the net asset purchases. Draghi's statement that there will be no hard stop on QE infers (but does not promise) at least 3-months extra QE from Sep18. That leaves us neutral on valuation rather than bearish. Given rolldown that means be long.

What about duration? The story is less straight-forward. In the near term, technicals support Bunds as 10yr equivalent net supply drops into year-end as the ECB buys longer on the curve. In 2018, the duration extraction by the ECB drops so net 10yr Bund supply goes up = bearish. It could be a little more bearish than we were previously thinking. Our calculations on 10yr net supply were based on a pro-rata drop in all APP elements. The risk is CSPP + CBPP3 + ABSPP volumes remain static. That means PSPP actually falls from €45bn now not to a pro-rata €22.5bn; but instead to c.€15bn. That will be a curve steepener next year too.

Periphery will rally for now. Interestingly, PSPP principal redemptions will be reinvested in the jurisdiction in which the maturing bond was issued, but the press release says this is "during the period of net asset purchases". Does that mean capital key fudges after net buying ends? Perhaps. Periphery will love the ambiguity and the idea of the Draghi periphery put.

What about the macro? ECB forward guidance may well have a time inconsistency problem if the USD were to rally. That maybe motivated a new Fed Chair and/or fiscal impulse. In these scenarios, EURUSD at 1.10 could see 2020 HICP projections (due Dec meeting) much closer to 2%. That would motivate an ongoing steep curve and some interesting volatility for rate expectations.

What to do? 1) We were hoping for better entry levels for a year end Bund squeeze but the ECB instead met consensus. #Trade via tactical ASW wideners. 2) The front end is already well priced for the ECB message so there is little room to extend the short end rally. #Trade via Rec SEK 1y1y as roll is 3bp per month and because the Riksbank is eyeballing ECB timing for its stance. 3) The periphery is supported into year end. #Trade via long periphery on ECB delivering low volatility and constructive ambiguity for reinvestments. 4) A strong economy motivates steep curves. #Trade via forward steepeners.

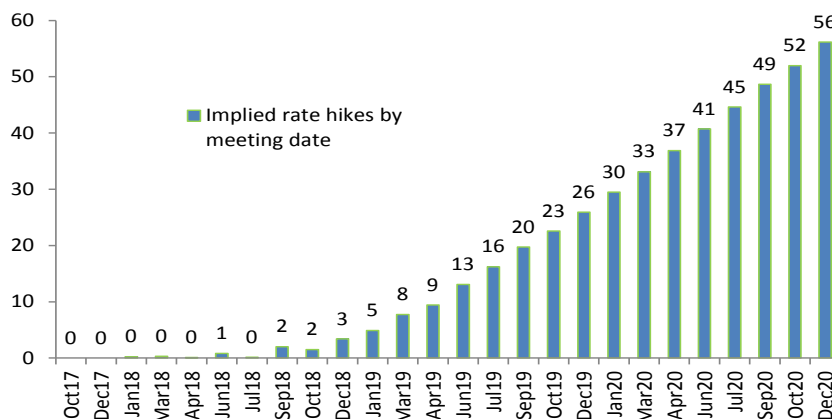
Front end pricing: no longer skeptical on valuations

We had previously been saying that the market was fully priced for the ECB forward guidance that rates rise only 'well past' the period of net asset purchases and that some mild bear risk existed because we thought the consensus of €30bn x 9-months was the maximum delivery.

In the event the ECB obviously delivered on €30bn x 9-months but a comment by Draghi at the press conference that there will be "no sudden stop" to QE infers that there could be a minimum of another 3-months of QE (perhaps just CSPP+CBPP3) after September. This is not a promise by Draghi but an expectation based on current views on the economy and inflation – and while we are skeptical that the economy will warrant further extension – a dispassionate assessment has to factor the raised the odds of QE throughout 2018.

- If that is now the risk, and with 'well past' widely seen as 6-months or a little longer the timing of the first +15bp rate hike in Jul19 no longer looks inappropriate. That makes us neutral on valuations but as a trade it means front end longs because of roll.

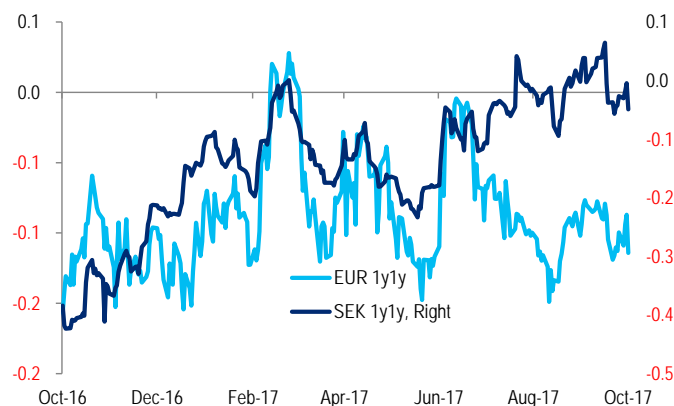
Figure 1. Draghi says there will not be any 'sudden stop' on QE so we have to raise the odds that APP in one form or another lasts through-out 2018. Combined with the 'well past' language it means that the Jul19 timing for the first hike now looks fair rather than the limit for markets. That could change on any USD rally (Fed/fiscal) but this was a bullish shift.



Source: Citi Research

- In terms of execution, we think a proxy ECB trade is to Rec SEK 1y1y, which rolls much better than EUR and has already priced in a deviation from the ECB rate hike timing path despite the Riksbank making it ever clearer that this would present a policy error risk.
- Following the ECB meeting, we expect to see more interest in carry trades, and Figure 3 shows the 3 month carry and roll on the German bond futures, using futures implied repo and the CTD in the basket. As we show below, net supply measured in 10yr bund equivalents will be falling this year as the ECB has to buy Germany longer on the curve. The bearish story on QE technical begins next year.

Figure 2. SEK 1y1y is the preferred long as a proxy ECB trade



Source: Citi Research ** As of 16.00 BST 26 Oct

Figure 3. German futures carry and roll

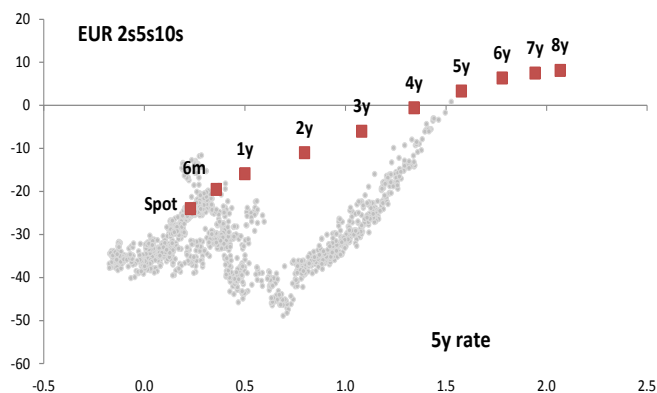
3m carry & roll			
	Carry	Roll	Total
DU	0.0	1.0	1.0
OE	2.9	4.0	6.9
RX	3.3	4.0	7.3
UB	1.9	1.0	2.9

*based on future implied repo and CTD

Source: Citi Research ** As of 16.00 BST 26 Oct

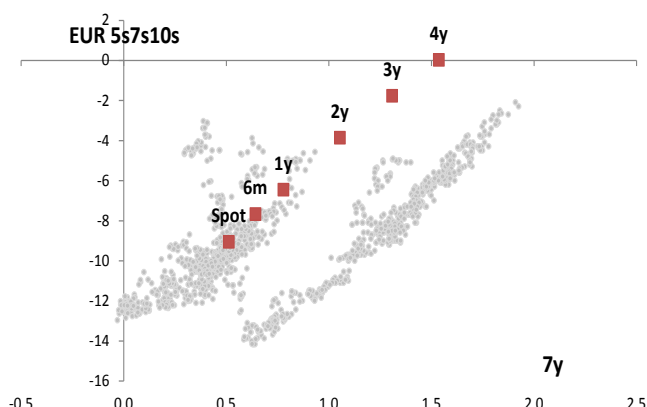
- Other carry trades that we think will proliferate include buying the belly of the curve again. On butterfly trades we like the mismatch of forward cheapness to the directional bias for the butterfly trade. For instance, Figure 4 shows that 2y €2s5s10s is cheap even in a sell-off. Figure 5 shows 3y €5s7s10s works similarly.

Figure 4. Directionally resilient butterfly carry trade (1): 2y €2s5s10s is cheap to the level of rates even in a sell-off.



Source: Citi Research

Figure 5. Directionally resilient butterfly carry trade (2): 3y €5s7s10s is cheap to the level of rates even in a sell-off.



Source: Citi Research

Constructive ambiguity on capital key is bullish periphery

The ECB press release after the Q&A detailed that redemption volume data for the next 12-months will be available from Monday 6th November. The reinvestments are a very strong influence on markets and it was always unclear what rules would apply to the reinvestments. The ECB now says:

"During the period of net asset purchases, PSPP principal redemptions will be reinvested in the jurisdiction in which the maturing bond was issued."

Leaving aside the fact that there was no mention of maturity of re-investments (which means they could go longer), the main takeaway is that this suggests the capital key will be respected for the reinvestments but ONLY during the period of net asset purchases and perhaps not thereafter.

It is unclear whether this is actually the case, because it could be that German issuer limits and budget surplus require a more nuanced statement later explaining that net selling is perhaps required to adhere to the 33% issuer limit rule.

- Whatever the motivation for this part of the press release, the backdrop is now one of constructive ambiguity and investors have typically shown great appetite for any idea that Draghi somehow has played the game well and is covering investors' back.
- Periphery in other words has been given another fillip. In 2018, net supply metrics will turn more bearish but perhaps less so than before.
- At the extreme, and because *reinvestments will be large*, it could infer that core Europe will see a QE unwind while periphery gets a QE extension, when the net APP is zero.....
-we don't quite believe that.... but to even ask the question is to romance the Draghi put once again for periphery valuations.

PSPP taper more aggressive than meets the eye

Draghi at several points in the Q&A suggested that the buying of corporate bonds would remain solid and the subsequent press release pointed in the same direction by noting that

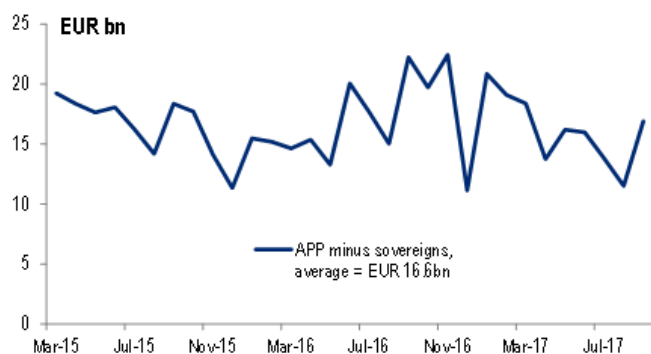
"The Eurosystem anticipates that the purchase volumes under the three private sector purchase programmes (the ABSPP, the CBPP3 and the CSPP) will remain sizeable."

This suggests that the drop in APP from €60bn to €30bn will not be pro-rata but instead see a more material drop in PSPP than the other components (CSPP, CBPP3, ABSPP). That is probably related to scarcity issues in Germany where Reuters sources last month noted that a purchase pace of €30 or €40bn per month would make it technically difficult to buy bonds. (That in turn means the ECB credibility on higher volumes is limited but they can extend the horizon via CSPP.)

Figure 6 shows that since the ECB QE started the amount of non sovereign paper bought has been remarkably stable around an average of €16.6bn. The variations from this average have largely been seasonal factors.

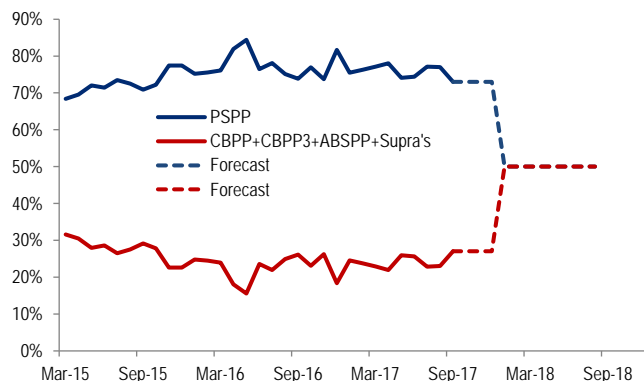
- Going forward into 2018, it is now likely that the proportion of sovereigns within APP is set to fall at the expense of other programmes, just as it did on the launch of CSPP.
 - To put that in context, today's buying of EGBs amounts to €45bn per month. Under a pro-rata drop for all components of APP this would have fallen to €22.5bn. Instead, it is likely that EGB purchases fall to nearer €15bn.
- That means for sovereigns the taper is not a 50% reduction in flow support but a reduction by 66%. That clearly has more bearish connotations for bond markets in 2018.

Figure 6. Non sovereign purchases have averaged €16.6 bn since APP started. The launch of CSPP was at the expense of PSPP volumes.



Source: Citi Research

Figure 7. If the ECB is to preference ongoing high purchase volumes in non-sovereign paper then the taper for EGBs is far more aggressive than shift from €60bn to €30bn would imply.



Source: Citi Research

How will this shift towards a more aggressive taper for EGBs play out for supply pressures? The Figure 7 shows the data for gross issuance, coupons, redemptions and PSPP since 2014 and to our 2018 projections. The NCR is gross supply minus all other items and here we have assumed that the total monthly sovereign purchases in APP will be €15 bn. The level of supply pressure in 2018 will not quite get to the 2014 pressure levels but the change from the 2015-17 period is nonetheless still palpable.

Figure 8. Net bond supply in 2014-18.

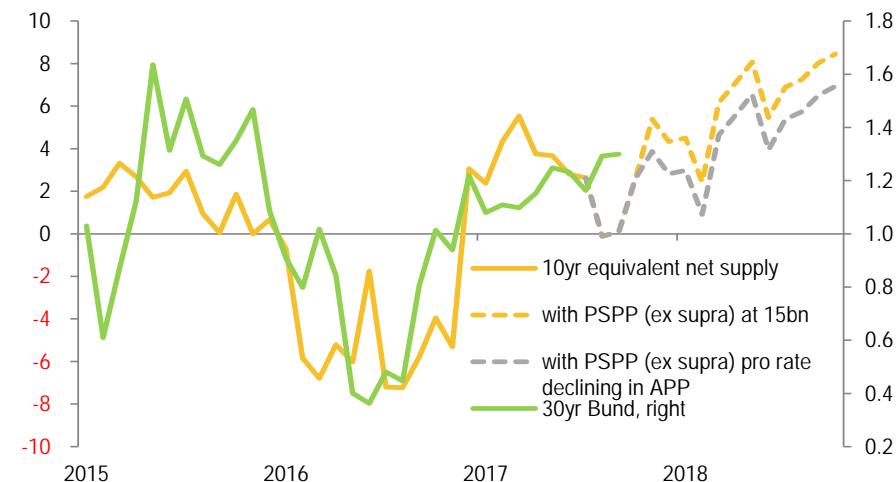
	2018					2017					2016					2015					2014				
	Gross Supply	Coupons	Redemptions	PSPP	NCR	Gross Supply	Coupons	Redemptions	PSPP	NCR	Gross Supply	Coupons	Redemptions	PSPP	NCR	Gross Supply	Coupons	Redemptions	PSPP	NCR	Gross Supply	Coupons	Redemptions	PSPP	NCR
Germany	162	20	161	34	-54	156	22	142	132	-141	160	25	171	159	-196	156	27	155	94	-121	172	29	144	0	-1
France	222	38	120	31	33	210	40	114	120	-65	214	43	125	131	-84	220	43	111	81	-15	203	43	104	0	56
Italy	224	49	188	30	-43	260	54	212	115	-122	231	54	149	128	-100	230	56	181	77	-84	240	57	192	0	-9
Spain	104	27	78	20	-21	133	30	87	77	-61	119	30	80	91	-82	140	31	84	55	-31	136	30	52	0	54
Netherlands	36	7	40	8	-18	32	8	34	30	-41	27	8	25	37	-43	47	9	35	23	-19	51	9	28	0	13
Belgium	27	10	21	6	-10	36	11	25	24	-23	38	11	23	26	-22	36	12	19	16	-11	32	12	19	0	1
Austria	22	6	19	4	-8	26	6	18	17	-15	23	7	12	18	-13	19	7	13	12	-13	21	7	22	0	-9
Finland	12	2	5	2	3	12	2	11	7	-8	12	2	7	13	-10	9	2	5	8	-6	11	2	7	0	2
Portugal	15	5	7	2	2	14	5	6	6	-3	14	5	6	13	-10	19	5	5	11	-2	14	4	9	0	-0
Ireland	11	4	9	2	-3	16	4	6	6	-1	8	4	7	11	-14	13	4	2	8	-1	12	4	3	0	5
Greece	3	1	2	0	0	3	1	2	0	-0	0	1	0	0	-1	0	1	0	0	-1	6	1	0	0	6
Total	838	168	649	139	-118	898	184	658	535	-478	845	191	604	627	-576	889	197	611	384	-304	897	201	580	0	116

Source: Citi Research *NCR = supply – coupons-redemptions-PSPP

We have tended to see the best correlations of yields, slope and ASW to supply measured in 10yr equivalents. This, unlike Figure 8, is defined as gross issuance minus ECB PSPP purchases.

- Figure 9 shows that Bunds yields (we show 30yr) have been sensitive to the level duration hitting the market. Naturally, if the ECB is buying less in sovereigns then yield pressure is 2018 is commensurately higher. That makes sense as lower ECB duration extraction means higher yields - though as we have been saying - the ECB today is still working on APP of €60bn and will progressively be buying longer dated Germany. That means 10yr equivalent supply falls into year-end, and means there is a short term squeeze risk, before trend-wise cheapening in 2018.

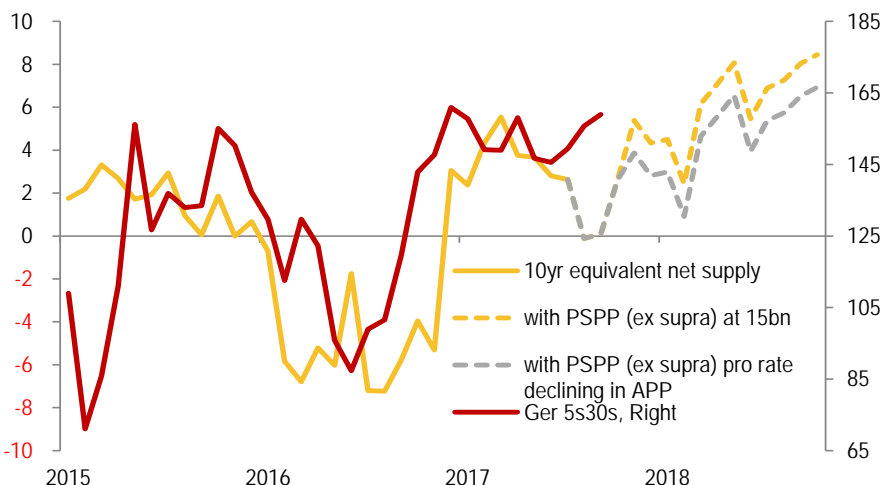
Figure 9. German 10yr equivalent net supply (gross minus ECB buying) is correlated to yields. A move to overweight non EGB components in 2018 naturally sees the more bearish inferences



Source: Citi Research

That is, we do not want to front-run the ECB led cheapening in terms of outright yield levels. We are more comfortable with steepeners. This follows from the more bullish potential at the short end as we discussed earlier and because slope measures tend to track net 10yr supply *trends* (Figure 10).

Figure 10. German 10yr equivalent net supply (gross minus ECB buying) is also correlated to slope (Bunds 5s30s)

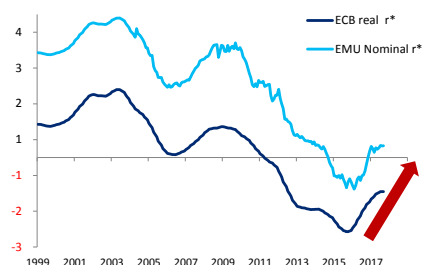


Source: Citi Research

Beyond the short term ECB trade

Finally, and beyond the ECB message today and the supply technicals, we think the macro conditions are leaning more persuasively towards higher yields and steeper curves next year.

Figure 11. ECB real and nominal neutral rate estimates



Source: Citi Research

The bigger picture is that Euro rates have upside risk on two factors. Firstly, the strength of the economic data will be forcing the ECB neutral rate higher as we discussed in [European Rates Weekly - Mandate creep](#). Here we showed that the nominal neutral rate has risen from -1% towards +0.35% as the depression level of the economy is left behind. The fact PMI data continues to look robust forces the model to revise up its estimate of just how accommodative the policy stance is, meaning that further upward moves in neutral rates are likely. That's a reason to be look at ongoing steep curves and key an eye on levels to short 3y1y once the ECB meeting induced rally has faded.

The second factor is global. The Fed could soon be under new more hawkish leadership amid rising expectations of a new fiscal impulse. All of this spells a potential new time-inconsistency risk for the ECB mantra of low rates for an extended period. That's because either a hawkish Fed or fiscal stimulus should see the USD gain. If these risks are combined then in a Mundell-Fleming framework the USD gains maybe very powerful.

What interests us is that very firm growth (2-2 ½x trend) should already see the Dec meeting staff projections for 2020 HICP firm towards perhaps 1.8%. Any EUR FX depreciation then risks getting to just below 2% and shaking up whether forward guidance in 2018 will actually be that robust. Any USD gains will also probably impact the longevity of the BOJ's 0% 1yr yield target and so adds another dimension to the risks for 2018.

What this means right now is that forward steepeners are one of the few trend-wise trades that we hold. Our trade recommendation has been in 3y €5s30s, and following today's ECB we could at €1s30s or €2s30s forwards as well.

Trades

- Rec SEK 1y1y as a proxy ECB timing trade. We have changed view on OIS valuations on Draghi's comment of '*no sudden stop*' and the Riksbank is merely shadowing the ECB.
- Tactical Bund ASW richening on a ECB duration led squeeze as it is doing APP at €60bn and at longer maturities this year.
- Rec 2y €2s5s10s or €3y 5s7s10s for carry with directional protection.
- Long periphery. Constructive ambiguity on reinvestments post net APP buying at the extreme can take us down a path of core country QE unwinding as the periphery gets a stealth QE extension. We don't buy it but investors love to romance the genius of Draghi so we would be happy to ride along for a while.
- We are short 30yr German real rates as a trend-wise trade that should be most sensitive 2018 bearish net supply inferences.
- Forward curve steepening emerges from today's more constructive read across for short end and intermediates rates on ECB hike timing, but in the bigger picture the € curve is pressured steeper by rising ECB neutral rates. The new risk is that the US policy mix could begin to make overtly dovish ECB forward guidance look less robust.

Peter Goves
EGB and SSA Strategy
+44-207-986-3215
peter.goves@citi.com

Periphery hold firm on slower for longer

Spreads largely shrugged off October's ECB as Draghi delivered more or less in line with the €30bn for 9m market consensus view. The largest move concerned the more idiosyncratic tightening in Bonos spreads given a reduction in perceived political risks. However regarding the ECB, we believe there could be some important medium term implications. On the one hand, there were several dovish elements from the open ended nature of the QE extension and ongoing implementation flexibility. For the remaining months of 2017, the flow of the ECB bid remains €30bn – with front-loading ahead of December likely to be spread supportive. As such, distinct spread widening is looking more and more like a 2018 theme on net supply dynamics and political risks, not least given the Italian election.

QE stretched into September 2018 and possibly beyond

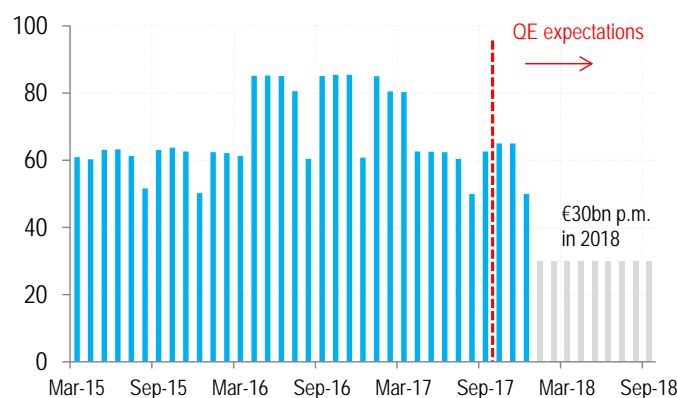
Periphery spreads – as you were: Soft core spreads finished the day largely unchanged on the day of the October ECB. Spreads in Bonos tightened by ~4bp largely as a function of Catalan headlines with BTPs nudging 2b tighter in sympathy, but all in all there was no spread shock. For the periphery, the key is that PSPP is now stretched out well into Q3 2018 *and possible beyond*, given the open ended nature of the QE announcement (Figure 12). There will also be no “sudden” stop.

The “downsizing” of PSPP in 2018: There were some interesting Draghi comments that are likely to inform the spread outlook in our view. First is the transparency of reinvestments which the press statement detailed as follows:

“During the period of net asset purchases, PSPP principal redemptions will be reinvested in the jurisdiction in which the maturing bond was issued.”

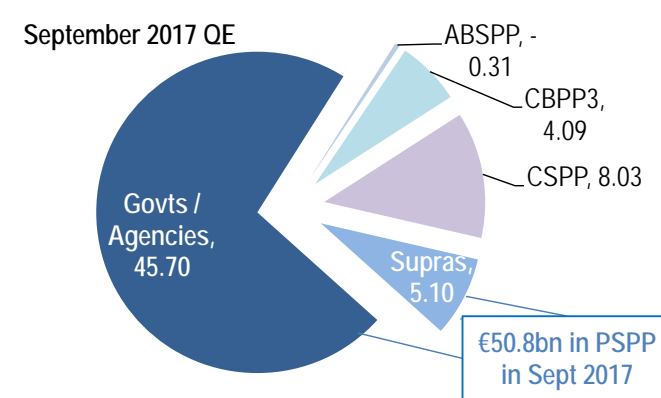
Constructive ambiguity: Importantly, we will get the first data set a week Monday regarding the upcoming monthly schedule of reinvestments for the next 12m. Second, was the emphasis on corporate bond purchases with the inherent flexibility of possibly adjusting programme proportions (Figure 13).

Figure 12. The QE “downsizing” into 2018 (€bn)



Source: Citi Research

Figure 13. Prospects for more focus on CSPP?



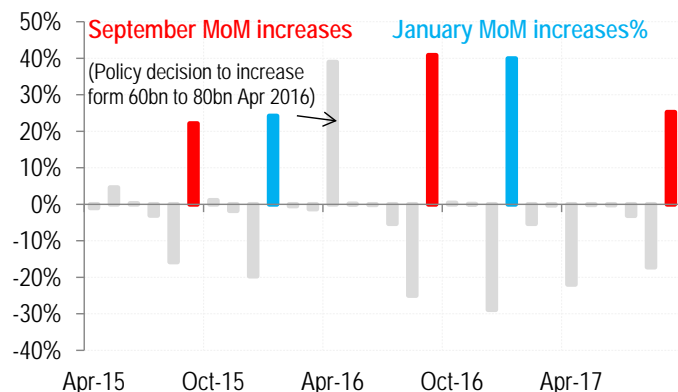
Source: Citi Research

Near-term spread outlook more benign

Above target buying in ahead of December: We had previously indicated the variability in monthly PSPP. For one, there is a tendency to resume purchases in September at a higher level from the August lull and then to maintain a relatively high pace ahead of December (Figure 14). This can support spreads in the upcoming weeks in our view. Second, to the extent there is continued over buying of BTPs, this too can help encourage a benign spread environment.

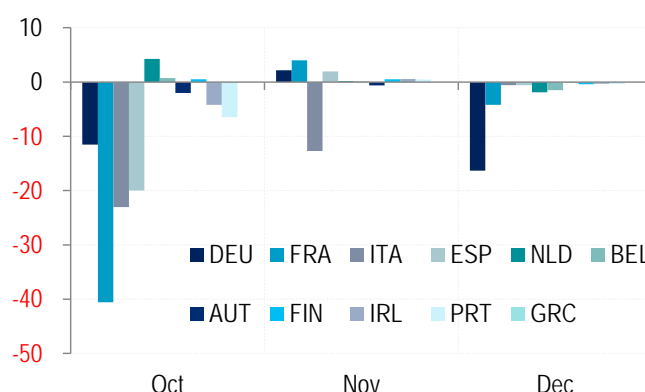
Benign NCRs in October/November too: From the supply side of the equation, we do not expect issuance in itself to be a strong spread widening force the rest of Q4. On a net basis, the NCRs across the majority of sovereigns are benign (Figure 15). Indeed for Italy, the NCR is most supportive compared with all other sovereigns in November at -€13bn.

Figure 14. Monthly MoM % change in QE amounts (%)



Source: Citi Research, ECB

Figure 15. Upcoming NCRs (€bn)

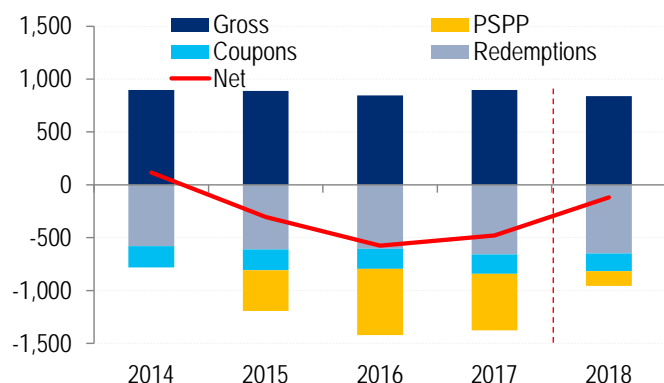


Source: Citi Research, DMOs

Evolving net supply dynamics into 2018

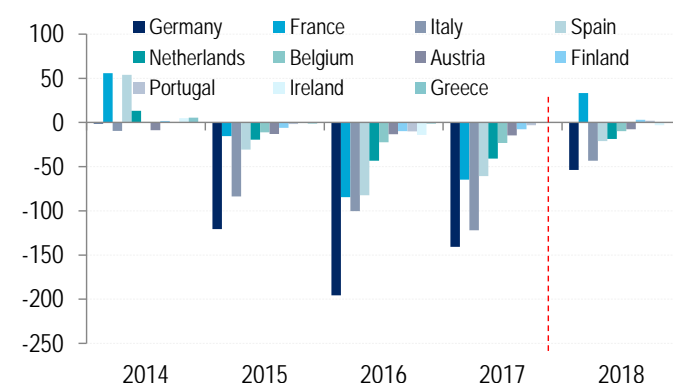
Medium term outlook: However, stretching into 2018, the net supply picture of course does inevitably change. In short, with much less PSPP next year, net supply because less supportive. In one scenario depicted in Figure 16, net supply moves from -€478bn in 2017 to just -€118bn in 2018. Note this is still negative and hence bond supportive all things being equal, it is just not as *supportive* as what markets have perhaps gotten used to. By sovereign, we can also see this in Figure 17.

Figure 16. Total EMU-11 net supply dynamics (€bn)



Source: Citi Research, DMOs

Figure 17. NCRs by sovereign (€bn)



Source: Citi Research, DMOs

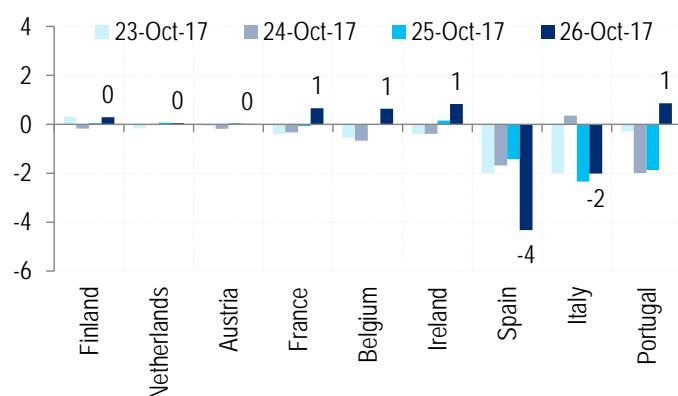
Bono spreads and subsiding perceived political concerns

Spread outlook still a function of political risks: The main move on the day of the ECB wasn't a systemic market reassessment, but an idiosyncratic 4bp tightening in 10yr Bono-Bunds (Figure 18). This came among news that despite previous indications, the Catalan Premier Carles Puigdemont did not call for snap elections in his TV address. Indeed, despite the escalation of we have previously highlighted how Bono spreads have largely shrugged off this event risk and market moves this week further underline this dynamic (Figure 18).

Upcoming signposts: In the near-term, there's plenty of headline risk for Bonos to contend with although recent spread behaviour suggests it will take a much stronger degree of escalation to disturb the market tone. At the regional level, the Catalan parliament is set to debate a response to the Article 155 package. Snap elections could well be on the horizon. In Madrid, the Spanish Senate is due to start on Friday (10 am CEST) the plenary session to debate and likely approve the Art 155 package ([Spain Economics Flash - Art 155 Activation To Inflamm Tensions Before Catalan Vote](#)).

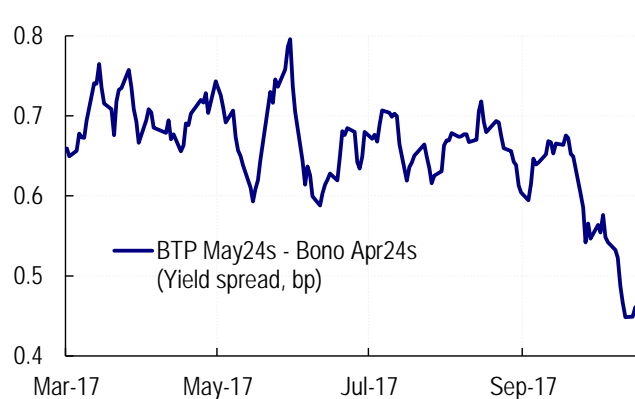
BTP-Bono spreads remain relatively tight: From the market's perspective, we remain mindful that while Bono spreads have generally remained range bound, they have (until today), underperformed in the general drift tighter in spreads. As such, Bonos remain cheap on a cross market basis ([European Rates Weekly: How to position into the ECB](#)). One spread of course is the consequent outperformance of BTPs to Bonos. We would increasingly look for such spreads to normalize. One catalyst would be the announcement of the *Italian election*, which we think could occur sometime in December.

Figure 18. Daily changes in 10yr spreads to Bunds (bp)



Source: Citi Research, Close 26th October

Figure 19. BTP richening to Bonos (Yield spread, bp)



Source: Citi Research, Close 26th October 2017

Conclusion - politics & net supply dynamics shape the 2018 outlook

We had highlighted last week how a QE adjustment need not necessarily be overdramatic for spreads. In the end, it was Spanish headline risk that governed much of the tighter periphery tone on the day of the ECB. We believe the near-term spread outlook has become more benign but remain vigilant against evolving net supply dynamics and political risks into 2018.

MPC hikes - none, one or some?

Jamie Searle
+44-20-7986-9493
jamie.searle@citi.com

The **Citi house view** is that the MPC will hike by 25bp next Thursday, in what would be the first tightening of monetary policy in 10 years. Any failure to deliver would likely just shift the expectation to December. Bottling it completely seems highly improbable given the reputational cost.

The market is treating the hike as a near certainty (90%), but is still reluctant to price a cycle, even a slow one. This seems complacent in our minds as the MPC reaction function appears to have changed considerably.

The vote split may provide some signaling, but the updated guidance will matter the most. One-then-done seems pointless to us and risks a bullish reversal. Instead, the MPC is likely to opt to keep up the hawkish bias.

That makes us bearish gilts into the meeting. Longer-term, 2s10s flatteners still offer the best risk-reward given the lack of hike premium. An early agreement on Brexit transition creates space for a hiking cycle and bear-flattening whereas cliff-edge risk might mean more QE and bull-flattening.

Vote signals

Quarterly GDP growth of 0.4% wouldn't normally be considered a green light to hike. These are not normal times, however.

The Citi – and market – base case is for a hike in November. The majority may be a thin one, but two members are already voting for a hike and three - including Carney - have confirmed that they are in the majority expecting to hike in the "coming months" (Figure 20).

Carney has history when it comes to expressing a personal view that a hike may be forthcoming and then not delivering. **The difference this time is that the signaling has come from a majority of the MPC.** Further, **Haldane and Vlieghe have already flipped once** from dovish to hawkish, so another flip so soon seems highly unlikely and would come with huge personal reputational risk.

That makes a vote to hike highly likely in our view. Interestingly, a **vote split of 5-4** would mean that the hike is **carried by external members** (making up three of the five). That would be a useful reminder that there are nine individual votes. It would also suggest that **Carney's influence on internal members may be less than widely assumed** and perhaps would devalue his future policy hints.

Figure 20. Individual MPC members – vote signals

Likelihood to vote for hike			
Least likely	Not sure	Likely	Highly likely
<i>Ambiguous on timing</i>	<i>Not spoken since before September meeting</i>	<i>Expect to hike in the "coming months"</i>	<i>Already voting for hike (since June)</i>
Ramsden Tenreyro Cunliffe	Broadbent	Carney Haldane Vlieghe	McCafferty Saunders
Blue = internal member. Red = external member			

Source: Citi Research

A more solid **vote split of 6-3** is highly possible, however, **perhaps most likely**. Broadbent hasn't expressed a view since November and may follow the governor. The remaining three members seem in no rush to hike.

A hike in November is likely to be carried by at least 5-4 and perhaps more likely 6-3. **The stronger the majority, the more hawkish the signal** with respect to future hikes, but the updated guidance will matter the most (see below).

If there is no hike in November, it seems highly unlikely that the majority for the “coming months” would also be dropped. That would just mean the market focuses fully on December, even though is not an Inflation Report. Still, this scenario would likely be bullish for longs as the commitment to hike would look weak.

Space for a cycle

The greatest market complacency, in our view, is in assuming that this is *not* the start of a cycle. The importance of the Inflation Report will not come from the latest forecasts, but from the updated guidance. Words matter more than the data. If the **MPC deliver a fully-priced hike and offer no new guidance on the next hike, current pricing will be largely validated**, although there may be a **relief rally** beyond the front-end and **bull-flattening** of the curve.

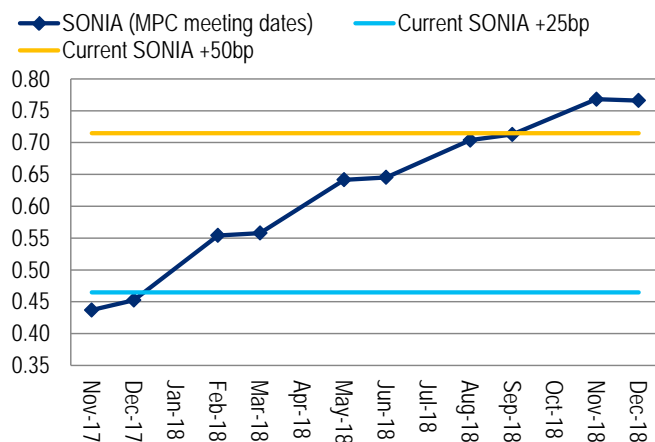
The market is less prepared for the MPC to deliver a hike alongside hawkish guidance. A second hike is priced in September 2018 (Figure 21), and a third hike is not priced until 2020. **The Citi view is for a further two hikes in 2018.**

A hiking cycle is more likely than widely appreciated in our view. That’s not because the fundamental backdrop has changed, but because the MPC’s reaction function to it has changed.

The MPC is making it clear that it will not be inhibited by Brexit uncertainty. Brexit risk doesn’t preclude tighter policy, and to prove it the MPC seems intent on hiking. That sends a clear message to the market that **the reaction function has switched from cautious risk management to an activist approach**. The prompt for this change was the failure of ‘open-mouth-operations’ and a genuine concern that the market was not responding to the data.

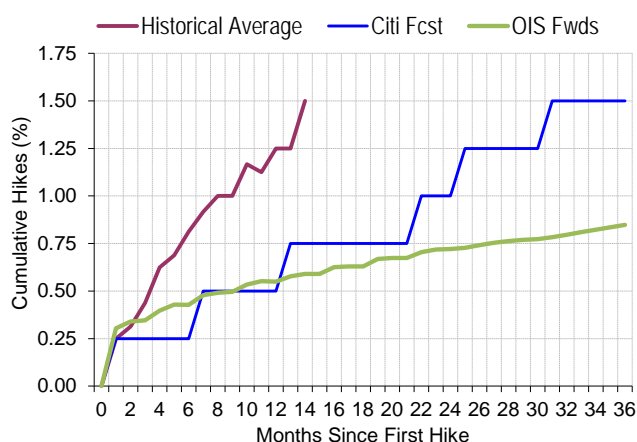
The **fundamental justification** is that potential growth has fallen and slack is disappearing. The MPC believe this will soon manifest itself in rising wages. **The context of robust global growth is also very important to the domestic decision** and encouraging less accommodative policy *everywhere*.

Figure 21. Market pricing for rate hikes this year and next



Source: Citi Research. As of 16:30 BST 26Oct17.

Figure 22. Cycle expectations vs historical precedent



Source: Citi Research, BoE. As of 16:30 BST 26Oct17.

Any hiking cycle will be a slow by historical standards, but perhaps not as slow as the market assumes. Figure 22 shows the average pace of the four tightening cycles since BoE independence in 1997. These hiking cycles have lasted up to 14 months with cumulative tightening ranging from 100bp to 150bp.

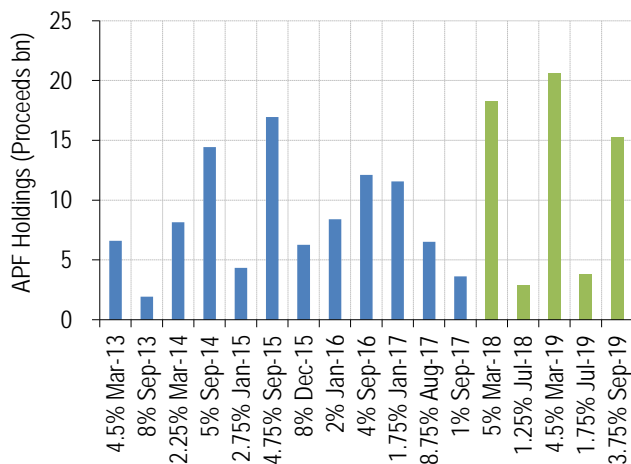
The chart also shows the very slow pace priced by the market - it can hardly be called a cycle. A third rate hike is still not fully priced at the three year horizon. In contrast, the **Citi profile has four hikes within the first two years.**

The space for a cycle clearly depends a lot on Brexit. If a transition deal is secured in the coming months then a cycle becomes much more probable. In contrast, if talks break down and a no deal/cliff-edge looms then the tightening will likely halt, perhaps reverse.

A quick word on APF re-investments

Hiking rates in November and then re-investing £18bn of gilts in March (the largest re-investment so far - Figure 23) doesn't fit that well together. Allowing a passive run-off of the APF would reduce the stock to £375bn (pre-referendum level) by end-2019 (Figure 24). It would also allow tightening without adding to the woes of mortgage-holding consumers. November is likely too early to revisit re-investments, however. McCafferty – who has been a lone voice on this – said earlier this month that unwinding the stock of QE should be considered, but only after several hikes. Still, the current guidance – to maintain the stock of QE until Bank Rate is around 2% – seems outdated to us. **The MPC may well want to update the guidance once the hiking cycle gets underway.**

Figure 23. Past and future APF re-investments



Source: Citi Research, BoE.

Figure 24. How quickly will the APF stock fall if re-investments end?



Source: Citi Research, BoE.

View – near-term bearish, long-term favour flatteners

The MPC is likely to hike and deliver hawkish guidance in our view. That makes us **bearish into next week's Inflation Report**. Longer-term, **the best risk-reward might be in 2s10s flatteners** given the market's reluctance to price a hiking cycle. A lot depends on Brexit. But, if a **transition deal** is forthcoming, that creates the space for a hiking cycle which isn't priced and should **bear-flatten 2s10s**. Alternatively, if **no deal** becomes base case, then hikes are off the cards and easing in the form of QE becomes more likely. That means **bull-flattening of 2s10s**. In short, we believe curve risk may be asymmetrically biased towards flattening.

Euro inflation – trading supply

Aman Bansal, CFA
+44-20-7986-1007
aman.bansal@citi.com

There are only four euro inflation-linked auctions left for 2017. Here we look at potential candidates for re-openings over these auctions. The two themes that emerge are the richness of OATi28 on the real yield curve, and heavy front-end supply of euro inflation-linked bonds. We highlight the richness of OATei21, BTPei22 and SPGBei21 break-evens vs Bunde23 and BTPei23.

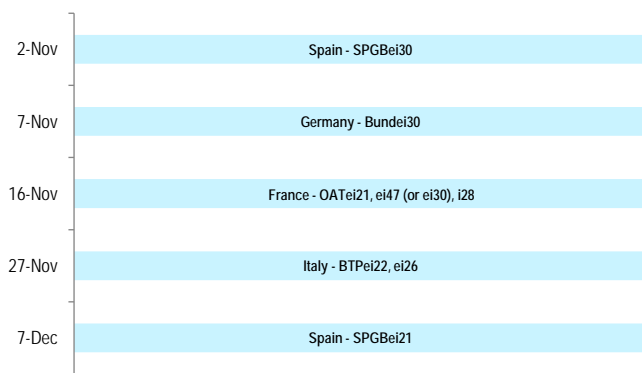
Supply forecasts for November-December

Figure 25 shows our expectations for euro inflation-linked supply over the remainder of 2017, based on past issuance patterns. Assessing relative value in these bonds, two themes emerge:

(1) Richness of OATi28 on the real yield curve

The AFT has alternated between OATi25 and OATi28 for re-openings over the last six auctions. If this trend continues, OATi28 is likely to be re-opened following the supply of OATi25 last week. However, the bond looks historically rich on the OATi25-28-29 real yield fly (Figure 26). Given OATi25 will likely not be re-opened this month, we expect any build-up of auction concession to drive the fly higher.

Figure 25. Citi supply projections into year-end



Source: Citi Research

Figure 26. OATi 25-28-29 real yield fly



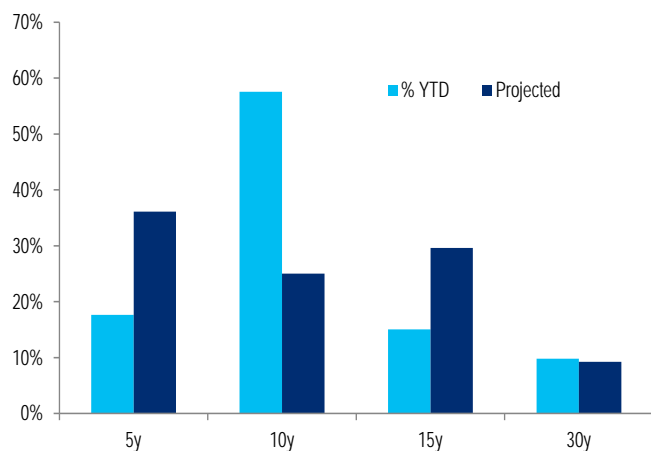
Source: Citi Research. As at 16:00 BST 26th October.

(2) Heavy supply pressure on front-end

Figure 25 also highlights the heavy supply pressure on the 5yr sector, with OATei21, BTPei22 and SPGBei21 all likely to be re-opened again in 2017. For Spain, this takes into account the Tesoro's preference to issue short-end bonds in months with low liquidity (SPGBei19 in December 2016 and SPGBei21 in August 2017). For Italy and France, this is the turn of BTPei22 and OATei21 in their regular re-opening cycles. However, this does highlight the increase in supply pressure on the 5yr sector of the curve (Figure 27).

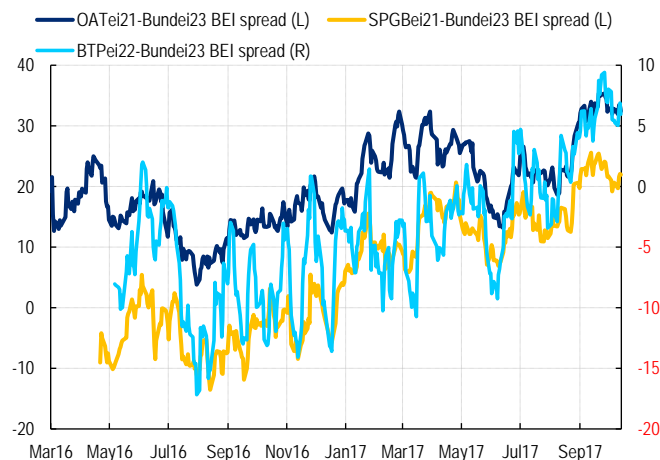
This concentration of supply on the sector could result in concession in these bonds vs slightly longer Bunde23 (Figure 28) and BTPei23 (Figure 29). These bonds already trade historically cheap, and lack any supply pressure as they are not currently being re-opened.

Figure 27. YTD supply break-down compared to projected for November-December



Source: Citi Research

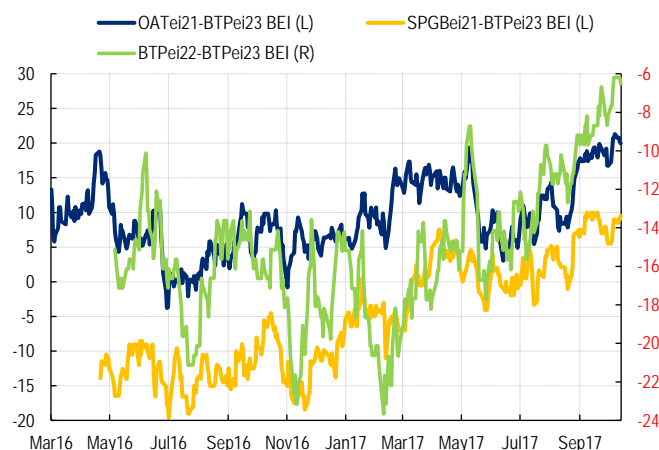
Figure 28. OATei21, BTPei22 and SPGBei21 break-evens look rich vs Bunde23



Source: Citi Research. As at 16:00 BST 26th October.

One risk to the view is the positive carry to year-end (for instance, BTPei22 accrues 11bp of inflation carry to 1 January, based on Citi forecasts). However, the BTPei23-22 break-even spread looks historically flat on a forward basis (i.e. even after accounting for the carry, Figure 30).

Figure 29. OATei21, BTPei22 and SPGBei21 break-evens also look rich vs BTPei23



Source: Citi Research. As at 16:00 BST 26th October.

Figure 30. BTPei23-22 break-even spread



Source: Citi Research. As at 11:00 BST 26th October.

EUR 30y tail payer skews looking cheap

Matteo Regesta

Derivatives

+44-20-7986-9101

matteo.regesta@citi.com

The payer skew on 30y tail looks cheap across expiries. Short positions in 1x2 1y30y payer swaption spreads provide attractive tactical hedges vs. higher level of rates.

A glance at the vol cube

In Figure 31 we compute the spread between ATM + 50bp implied vol and ATM implied vol. We note that the payer skew on long tails stands out as relatively cheap; in particular, the spread on the 30y swap is tighter than 2 norms already at nine month expiry.

We plot the evolution of 1y30y 50bp OTM payer skew in Figure 32.

Figure 31. Spread between ATM+50bp vol and ATM vol

	1y	2y	3y	4y	5y	6y	7y	8y	9y	10y	12y	15y	20y	25y	30y
1m	18.0	18.6	18.7	18.7	18.4	17.8	17.0	16.2	15.3	14.4	13.2	11.5	8.8	7.5	6.4
2m	17.7	17.9	18.0	17.8	17.4	16.7	15.9	15.0	14.1	13.1	11.9	10.1	7.3	6.2	5.1
3m	17.4	17.4	17.3	17.1	16.6	15.8	14.9	14.0	13.0	12.0	10.8	9.1	6.3	5.2	4.1
6m	15.9	16.1	15.3	14.4	13.4	12.6	11.7	10.8	9.9	9.1	8.1	6.6	4.3	3.1	2.0
9m	14.8	14.6	13.8	12.8	11.9	11.0	10.1	9.3	8.4	7.6	6.7	5.5	3.5	2.6	1.8
1y	13.3	13.0	12.1	11.2	10.3	9.4	8.6	7.8	7.0	6.2	5.5	4.4	2.8	2.2	1.7
2y	9.3	8.6	8.1	7.7	7.2	6.5	5.9	5.3	4.8	4.3	3.9	3.3	2.4	2.1	1.8
3y	6.7	6.0	5.6	5.3	4.9	4.6	4.3	4.0	3.7	3.5	3.2	2.9	2.4	2.1	1.9
4y	5.7	5.1	4.7	4.3	4.0	3.8	3.6	3.4	3.3	3.1	2.9	2.7	2.3	2.1	2.0
5y	4.8	4.2	3.8	3.5	3.2	3.1	3.0	2.9	2.8	2.8	2.6	2.4	2.2	2.1	2.0

Source: Citi Research

Figure 32. Evolution of 1y30y ATM+50bp/ATMF payer skew



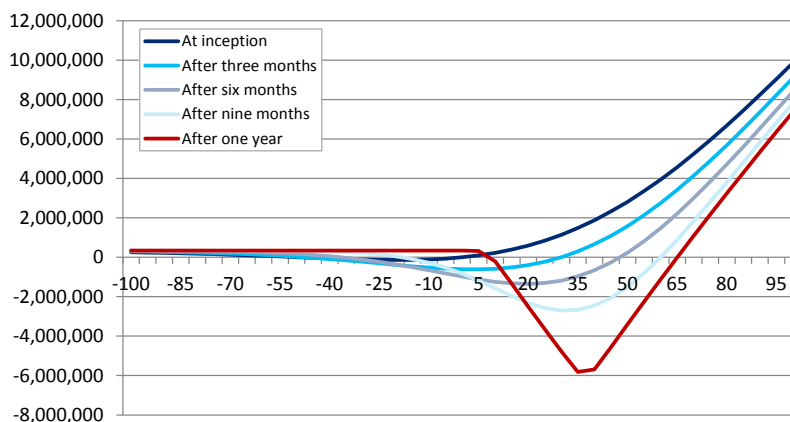
Source: Citi Research

How to construct tactical hedges against higher level of rates

The yield on the Bund declined by less than 4bp on Thursday, which suggests that ECB delivered closely in line with market expectations. In the meantime implied volatility declined on the day, although, again, the magnitude of the changes mostly reflected the passing of the ECB event risk.

Investors that enter a short position in the 1x2 1y30y ATM/ATM + 30bp payer swaption spread receive a premium credit upfront.

Figure 33. 1y30y ATM/ATM+30bp spread PnL over time & for different rate changes (bp)



Source: Citi Research

Assuming EUR 100mn by EUR 200mn notional, they are paid spot EUR 408k¹.

The evolution of the strategy PnL for different rate scenarios is calculated in Figure 33 (EUR 100mn x EUR 200mn).

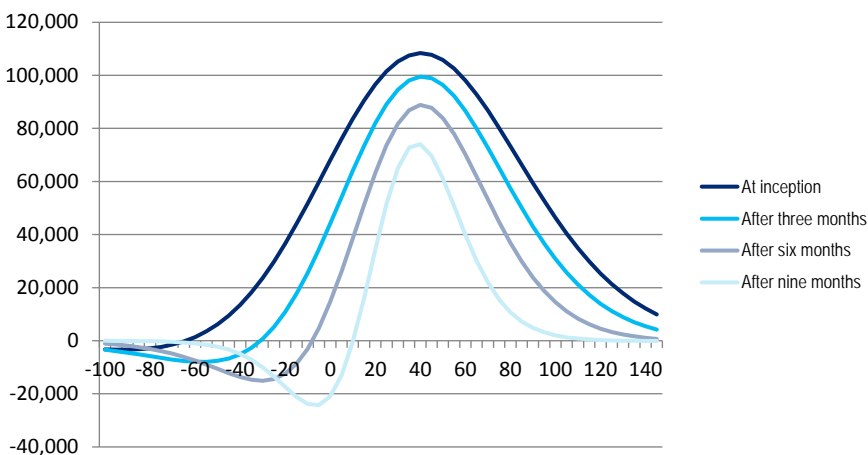
Observe that after three months, i.e. around end of January next year, the strategy breaks even after a sell-off of 30bp, assuming unchanged implied volatility.

For EUR 100mn x EUR 200mn, the vega exposure is EUR 75k. With three-month aging, vega is worth EUR 52k. In the scenario where *the sell-off is accompanied by a vol rally*, the strategy would obviously break even for less than 30bp sell-off at the three-month horizon: a 9 norm increase in vol takes down the break-even rate increase to 15bp.

The three month carry is negative and worth -380k over three-month, assuming again EUR 100mn x EUR 200mn.

We show computations for the vega risk over time and in different rate scenarios in Figure 34.

Figure 34. Vega of 1y30y ATMF/ATMF+30bp spread over time & for different rate changes (bp)



Source: Citi Research

Conclusion

Investors who are concerned with the impact of lower net issuance next year as a result of the reduction of monthly ECB buying to EUR 30bn should consider entering into a short position in the 1x2 1y30y ATMF/ATMF + 30bp payer swaption spread, as a cheap tactical hedge vs. higher level of rates and higher implied volatility. This construction distinctly improves over comparable vanilla payer swaption strategies in terms of cost and carry.

The potential loss of the strategy is floored.

The main risk is the occurrence of the scenario where either realized or implied vol (or both) meaningfully decrease.

¹ Price as of 26 October 2017, as of 4:05pm.

Why SSAs can continue to outperform

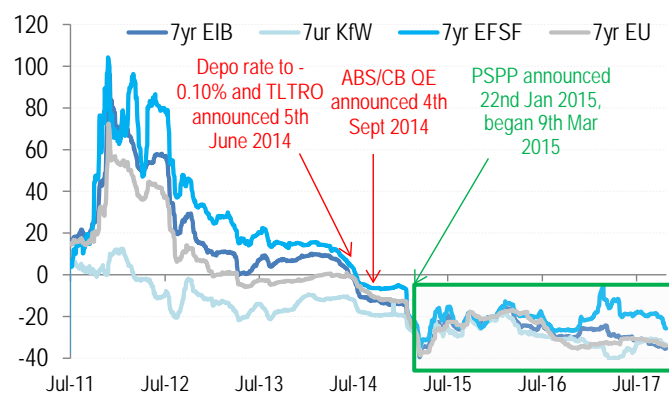
Peter Goves
EGB and SSA Strategy
+44-207-986-3215
peter.goves@citi.com

Overall, the consensual ECB came with dovish twists for spread markets. Focusing on the SSA sector, we detail various distinguishing characteristics, not least the ongoing 50% issuer limit for supras (as opposed to the 33% for EGBs). With front-loading likely in PSPP ahead of December and the vast majority of supply complete, we believe the road is now clear for ongoing outperformance. To the extent there is core market volatility, the SSAs' low beta characteristic can also work in the sector's favour.

No dramatic change in spreads

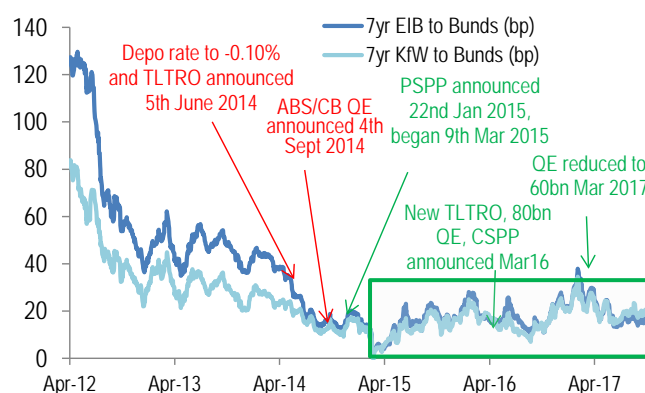
Spreads likely to remain range-bound: As detailed in our [European SSA & Covered Bond Monthly: Trading QE taper](#), there were many factors that meant the spread adjustment to a QE reduction need not be overly dramatic. With hindsight, this proved perhaps to be something over an understatement. As Draghi's QE "downsizing" was broadly in line with the consensus, the spread reaction in many markets was muted. For various reasons – from the likely front-loading of QE ahead of December and much reduced supply pressures – we believe the near-term outlook for SSA spreads is relatively benign (Figure 35, Figure 36).

Figure 35. Long-term history of 7yr SSA ASW levels (bp)



Source: Citi Research, Close 26th October

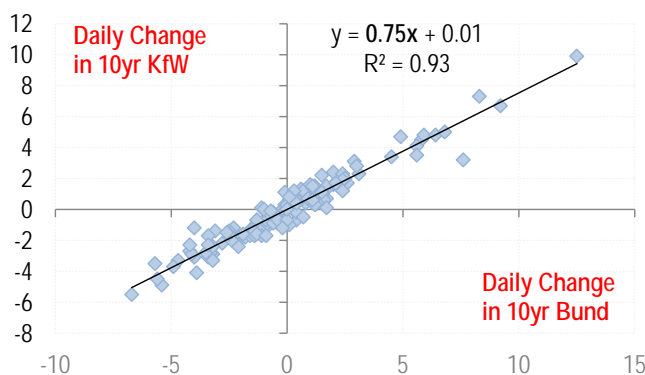
Figure 36. Long-term history of 7y SSA spreads to Germany (bp)



Source: Citi Research, Close 26th October

Low beta of this high credit quality sector: Another reason for the SSAs' sector likely outperformance is its classic low beta characteristic. To the extent there is volatility in the core, note that KfW yields tend to move around 75% to that of Bunds (Figure 37, Figure 38).

Figure 37. KfW yields move ~75% that of Bunds (bp)



Source: Citi Research, Bloomberg, last 6m, , Close 26th October

Figure 38. 6m stats on SSAs to Germany and France

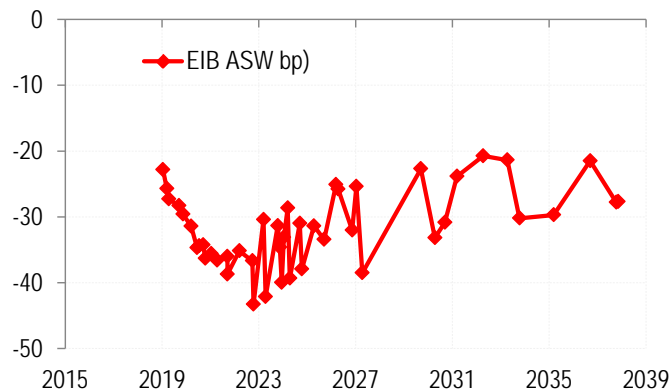
SSA	10yr KfW	10yr EIB	10yr EFSF	10yr EU	10yr BNG
3m Beta to Germany	0.78	0.81	0.80	0.80	0.81
3m Beta to France	0.78	0.79	0.80	0.80	0.79
3m R^2 to Germany	94%	95%	92%	92%	95%
3m R^2 to France	90%	90%	88%	89%	90%

Source: Citi Research, Bloomberg, Close 26th October

Supra ASW distortions likely to persist

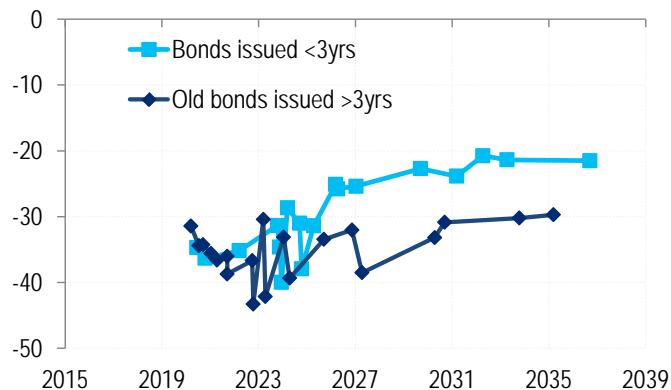
We have also detailed how PSPP reinvestments mean that the ECB's presence in the supra market will remain well beyond the formal end of net QE buying. As such, ASW distortions are unlikely to dissipate any time soon in our view (Figure 39, Figure 40). Furthermore, to the extent that repayments are "extended out the curve", then this could also help support longer-dated sectors ([European Rates Weekly: What's priced for ECB PSPP?](#)).

Figure 39. EIB ASW curve (bp)



Source: Citi Research, Close 25th October

Figure 40. EIB ASW curve segmented by issue date (bp)

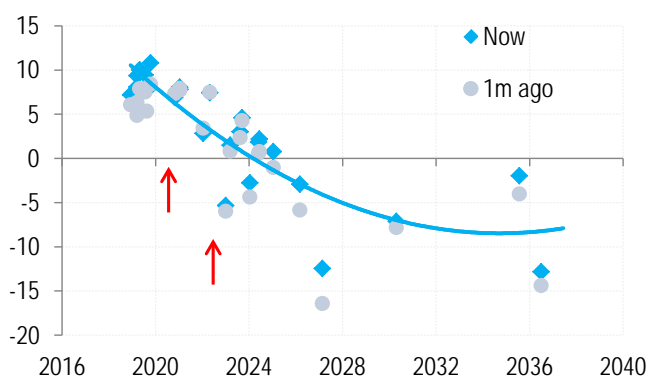


Source: Citi Research, Close 25th October

German credit quality increasingly attractive into year-end vs OATs

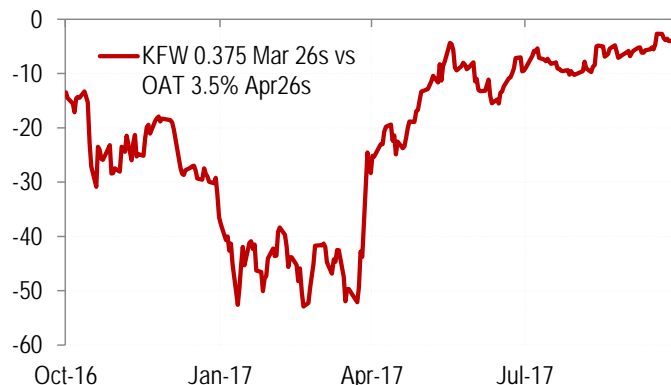
Given scope for front-loading of PSPP into year-end and with much less supply expected for the remainder of 2017, we remain on the look-out for opportunities. One idea is to consider the cheapening of KfW to France. Note the spread curve movements over the last month and how in the 9yr sector, yields are near flat (Figure 41, Figure 42). Although we are not necessarily bearish on OATs here, at the same yield, we would increasingly prefer AAA/Aaa credit quality.

Figure 41. KfW spread curve to France (bp)



Source: Citi Research

Figure 42. 9yr KfW nearly flat to OATs – where would you rather be?



Source: Citi Research

Near-term supply/demand balance favourable for spreads

The October ECB was no game changer for spread markets, at least in terms of near-term dynamics. Evolving net supply dynamics may become important for 2018, but for now, likely PSPP front-loading and waning issuance paint a relatively benign spread outlook for the rest of Q4 in our view.

Tradesheet

Recommended trades

Figure 43. Open trades

Trade	Entry Date	Entry level	Live ¹	MTM Level ²	Target	Stop	Carry 3m (bp)	PnL (bp)	Reasonable basis and risks
Sell RAGB Sep21 vs Bund Sep21	12-Oct-17	11	10	10	23	5	-1	-1	Lack of supply and upcoming Austrian election as an event risk. Risk: Sharp sell-off in more liquid Bund / unexpected upgrade of Austria.
1x2 Rec spread on € 3y1y (AT MF/36bp) - Target/stop in PnL terms	5-Oct-17	0	0	0	15	-7.5		0	Tactically short front end € rates. Risk: Global economic shock that motivates rate cut expectations.
Sell Bunde146 real yield	21-Sep-17	-0.30%	-0.33%	-0.33%	0.00%	-0.45%	3	3	Real yields should cheapen on projected ECB taper. Risk: Any growth shock arresting central bank exits.
Buy gilt Dec27 vs Jul19	14-Sep-17	86	91	91	70	94	2	-4	The market may price policy error if the MPC hike. Risk: Hike prospects fade, but infl drivers take long-end gilt yields higher.
Rec SEK 1y1y	7-Sep-17	-5.25	-1	-7	-15	9	9	2	RV carry trade given disconnect to EUR Risk: ECB ignores euro strength
€3y5s30s steepener (Target/stop in PnL terms)	24-Aug-17	71.2	74	78	25	-12	5	7	QE tapering is a steepener. Risk: Any risk-off flattening curves globally.
Long 1y10yshort 1y5yshort 1y30yvol	24-Aug-17	-203	-168	-168	100	-250		35	Playing mean reversion. Risk: Strong implied volatility rally & flattening pressure on long-end of curve.
Rec USD 5y5y vs EUR	18-Aug-17	101	119	122	60	125	-4	-21	Prefer \$ duration over € Hard for belly to sell-off with \$5y1y OIS is at 1.93%. Risk: An acceleration in US inflation / GDP beyond trends in Europe.
OAT Feb20 vs May22 steepener	18-Aug-17	33.1	36	36	56	29	-2	3	ECB gradually exiting QE and increased supply in September. Risk: Geo-political tension
Sell SPGBel24 break-even vs BT Bel26	6-Jul-17	12	10	10	0	18	2	2	Historically wide level. Risk: Continued supply focus in long-dated SPGBel's.
Buy DSL Jul23 vs BNG Jul23	3-Jul-17	-17	-17	-17	-29	-9	-1	0	Step up in quality before markets are caught by summer inertia. Risk: Bullish market movement during summer absent any supply
Pay 6m1y1y GBP versus EUR	29-Jun-17	0	-10	-10	40	-20		-10	Probability of a BOE hike has been overcooked. Risk: Pricing of a series of BoE hikes.
SEK 2s5s steepener	29-Jun-17	65	64	64	87	54	1	-1	Steepening risk on more hawkish policy rate path. Risk: Dovish outcome from tolerance band in inflation mandate.
Sell SPGBel27 break-even vs OAT ei27	15-Jun-17	-3.5	-8	-8	-20	5	0	4	Relative supply prospects & cash flows could weigh on richness. Risk: Lack of supply in SPGBel27 in favour of SPGBel21.
Buy KFW Jan24 vs CADES Jan24	12-Jun-17	-2	-3	-3	-16	4	0	0	End of QE and wider OAT Bund forecasts Risk: Large KFW supply in the 7-year sector of the curve.
OAT ei47-27 break-even flattener	1-Jun-17	56.5	52	52	45	62.5	-1	4	Fade the richness of OAT ei47 break-even. Risk: Positive real yield keeps up RM demand in OAT ei47.
Buy FBAVP Sep24 vs OLO Oct24	31-May-17	23	19	19	10	32	1	5	Historically cheap level Risk: Very large supply by Belgian covered bond issuers.
Buy KIW Jun24 vs OLO Jun24	25-May-17	0	-1	-1	15	-8	-1	-1	With supportive technical at a flat spread, move up in quality. Risk: Downgrade of KIW & heavy supply in the 7yr sector from KIW.
Buy EIB Apr33 vs OAT Oct32*	18-May-17	-6	0	0	-23	15	-2	-9	Supportive fundamentals, technicals and entry level to move up in quality. Risks: High unexpected issuance in 15yr EIB, a downgrade of EIB.
Sell €6m5y5y 1.75% payer / buy 6m5y5y 1.5/1.0% Rec spread	11-May-17	0	1	1	100	180	0	1	Terminal rates likely to be below 2%. Risk: Global taper tantrum.
Long RX vs RFGB Apr26	11-May-17	24	21	21	35	15		-4	ECB will start to hit 33% limit in RFGBs quicker than other core EGBs. Risk: Sudden repo cheapening in Germany
Buy OAT ei27 break-even vs Bunde126	11-May-17	11	9	9	21	6	0	-2	Cheapest linker on the curve. Risk: Concession that takes the bond past its range vs Bunde126
2s5s BTP steepener vs Bunds	11-May-17	64	42	42	114	39	4	-13	Positive carry proxy for 10yr BTP-Bund spread. Risk: Change in the sensitivity of 2s5s BTP-Bund box with 10yr spread.
Buy NRW Dec20 vs ONT Sep20	11-May-17	-2	-7	-7	-10	3	0	4	Canadian provinces have performed too well and look rich. Risk: NRW supply in the front end and QE modality amendments.
Buy €2y1y 0.00/0.27/0.47 payer ladder	15-Dec-16	0	2	2	15	-5		2	Expensive 2y1y payer skew. Risk: 95bp sell off of 1y swap over the life of the trade
Buy €1y-5y5y 1.73/1.37/1.01/0.65 midcurve recur condor	15-Dec-16	60	72	72	150			12	Monetizing 100bp trading range of 5y5y rate. Risk: Strong curve pressures that push 5y5y rate beyond profit range.
Sell 5y5y UK RPI***	15-Dec-16	3.59	3.41	3.40	3.10	3.47		19	Market has got ahead of itself and expect a correction lower. Risk: Higher spot infl creates bullish mood for infl expectations.
Buy gilt Jul26 yield-yield swap vs Dec46	15-Dec-16	36	39	39	50	29.0		3	10s30s swap spread box tends to reverse when QE pauses. Risks: Futures selling drives 10s cheaper & LDI drives 30s richer.
Receive € 2y fwd 2s5s10s	15-Dec-16	-11.8	-11	-15	-28	0	3	3	Forward cheapening unlikely to be realized. Risk: Upside surprise in inflation forcing market to price hawkish ECB.

Source: Citi Research, Bloomberg. As at 17:00 London time 26th October 2017.

NB: Futures trading involves substantial risk of loss.

Figure 44. Open Trades (Continued)

Trade	Entry Date	Entry level	Live ¹	MTM Level ²	Target	Stop	Carry 3m (bp)	PnL (bp)	Reasonable basis and risks
Sell 5y5y HICPxT inflation swap**	15-Dec-16	1.67	1.66	1.58	1.48	1.60		9	ECB taper slows progress to higher inflation with DEU still the cap. Risks: Higher inflation near term/ pause in supply supports.
Buy EUR 2y2y0.12/0.37/0.62 payer ladder	15-Dec-16	0	6	6	15	-5		6	Historically cheap reflationary trade. Risk: Disorderly implied vol rally.
Buy KfW Jun24 vs EU Apr24	15-Dec-16	9	9	9	0	15	1	0	Volatility provides opportunity to move to higher rated KfW at a pick-up. Risks: Sell-off in liquid German assets & unexpected KfW 8yr supply.
¹ Trade level if initiated today. ² The level of our trade marked to market today. * Stop revised on 6 June 2017. ** Target/stop revised on 14 September 2017. *** Target/stop revised on 29 June 2017.									
Book PnL								60	
Closed Trades PnL								370	
Total PnL								430	
Book 3m carry							20		

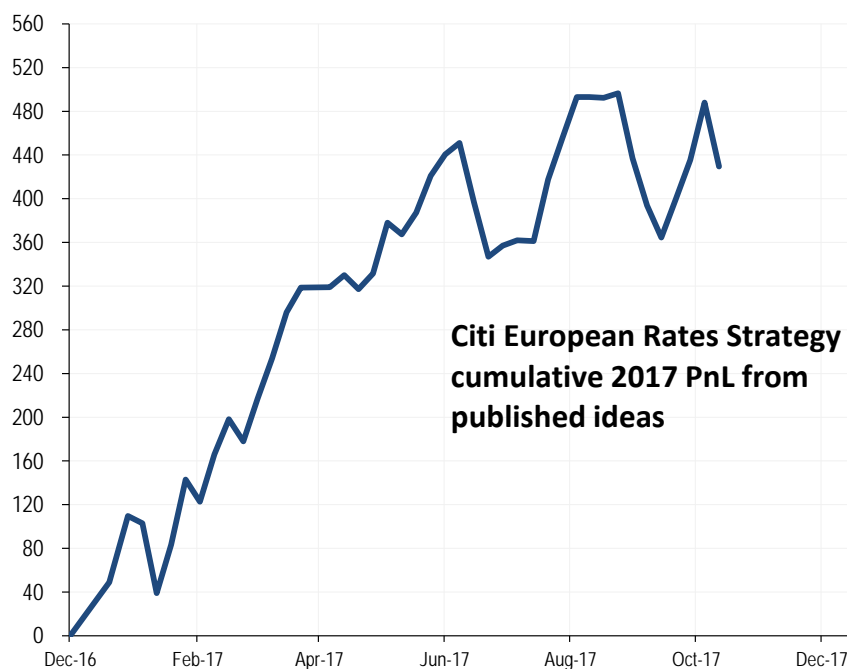
Source: Citi Research. As at 17:00 London time 26th October 2017.

Figure 45. Closed trades this week

Trade	Close Date	Entry level	Live	Closing MTM Level	Target	Stop	Carry 3m (bp)	PnL (bp)	Reasonable basis and risks
Buy Nov17 MPC Sonia	Hit Stop 25 Oct 17	35	43	43	22	43.0		-8	Rate hike this year unlikely given Carney's relative dovishness. Risk: Wage growth picks up in the second half.

Source: Citi Research

Figure 46. Cumulative PnL of trades recommended since 2017 Outlook



Source: Citi Research, Bloomberg. P&L on trade ideas includes carry and roll costs but not trading costs. Results should not, and cannot, be viewed as an indicator of future performance.

ECB QE tracker

Figure 47. Monthly ECB QE Tracker (€bn)

	Govts / Agencies	Supras	Total PSPP	ABSPP	CBPP3	CSPP	TOTAL QE
Mar-15	41.7	5.7	47.4	1.2	12.4		60.9
Apr-15	42.0	5.7	47.7	1.2	11.5		60.3
May-15	45.4	6.2	51.6	1.4	10.0		63.1
Jun-15	45.2	6.3	51.4	1.6	10.2		63.2
Jul-15	45.1	6.3	51.4	0.9	9.0		61.3
Aug-15	37.4	5.4	42.8	1.3	7.5		51.6
Sep-15	44.7	6.3	51.0	1.9	10.1		63.0
Oct-15	46.0	6.2	52.2	1.6	10.0		63.7
Nov-15	48.5	6.7	55.1	0.6	6.9		62.6
Dec-15	38.9	5.4	44.3	0.1	5.8		50.3
Jan-16	46.9	6.0	53.0	2.3	7.2		62.4
Feb-16	46.9	6.4	53.4	1.0	7.8		62.1
Mar-16	46.6	6.4	53.1	0.4	7.8		61.3
Apr-16	69.8	8.7	78.5	0.0	6.6		85.2
May-16	72.0	7.7	79.7	0.0	5.6		85.2
Jun-16	65.0	7.0	72.1	0.5	6.1	6.4	85.1
Jul-16	62.9	6.7	69.7	0.9	3.3	6.8	80.6
Aug-16	45.4	5.1	50.5	-0.3	3.5	6.7	60.4
Sep-16	62.9	7.1	70.0	0.5	4.7	9.9	85.1
Oct-16	65.7	7.3	73.0	0.6	3.4	8.4	85.4
Nov-16	63.0	7.2	70.1	1.3	5.0	9.0	85.4
Dec-16	49.6	5.4	55.0	0.3	1.4	4.0	60.8

	Govts / Agencies	Supras	Total PSPP	ABSPP	CBPP3	CSPP	TOTAL QE
Jan-17	64.2	7.2	71.4	0.5	4.7	8.4	85.0
Feb-17	61.4	6.8	68.2	0.1	4.3	7.8	80.5
Mar-17	61.9	6.9	68.8	0.7	2.4	8.3	80.3
Apr-17	48.9	5.4	54.3	-0.4	1.9	6.8	62.6
May-17	46.3	5.2	51.5	-0.1	3.6	7.6	62.5
Jun-17	46.4	5.2	51.6	0.5	3.3	7.0	62.4
Jul-17	46.6	5.3	51.9	0.5	2.5	5.6	60.4
Aug-17	38.5	4.3	42.8	-0.2	2.7	4.7	50.0
Sep-17	45.7	5.1	50.8	-0.3	4.1	8.0	62.6

TOTAL* 1322.3 425.8 1748.1 24.1 231.3 114.7 2118.1

*At amortized cost, at month end

MONTHLY PURCHASES (€bn) before amortisations

	Germany	France	Italy	Spain	Netherlands	Belgium	Austria	Portugal	Finland	Ireland	Other sov	Supras	Total PSPP
Mar-15	11.1	8.8	7.6	5.4	2.5	1.5	1.2	1.1	0.8	0.7	1.0	5.7	47.4
Apr-15	11.1	8.6	7.6	5.5	2.5	1.5	1.2	1.1	0.8	0.7	1.3	5.7	47.7
May-15	12.1	9.5	8.2	5.9	2.7	1.7	1.3	1.2	0.8	0.8	1.3	6.2	51.6
Jun-15	12.0	9.4	8.2	5.9	2.7	1.7	1.3	1.2	0.8	0.8	1.3	6.3	51.4
Jul-15	12.0	9.5	8.2	5.9	2.7	1.6	1.4	1.2	0.9	0.8	1.0	6.3	51.4
Aug-15	9.9	8.1	6.7	4.9	2.2	1.4	1.1	1.0	0.7	0.6	0.9	5.4	42.8
Sep-15	11.9	9.5	8.2	5.8	2.6	1.6	1.3	1.1	0.8	0.8	1.0	6.3	51.0
Oct-15	12.2	10.0	8.4	6.0	2.7	1.7	1.3	1.2	0.8	0.8	0.9	6.2	52.2
Nov-15	12.9	10.2	8.9	6.3	2.9	1.8	1.4	1.2	0.9	0.8	1.1	6.7	55.1
Dec-15	10.4	8.3	7.2	5.1	2.2	1.4	1.2	1.0	0.7	0.7	0.6	5.4	44.3
Jan-16	12.3	10.0	8.6	6.1	2.8	1.7	1.3	1.2	0.9	0.8	1.2	6.0	53.0
Feb-16	12.4	10.0	8.5	6.1	2.8	1.7	1.4	1.2	0.9	0.8	1.1	6.4	53.4
Mar-16	12.4	9.9	8.5	6.1	2.8	1.7	1.4	1.2	0.9	0.8	1.0	6.4	53.1
Apr-16	19.0	14.9	13.0	9.3	4.2	2.6	2.1	1.4	1.3	1.1	0.8	8.7	78.5
May-16	19.6	15.4	13.4	9.6	4.4	2.7	2.1	1.5	1.4	1.1	0.8	7.7	79.7
Jun-16	16.9	13.7	12.8	9.2	3.8	2.3	1.8	1.4	1.2	1.1	0.7	7.0	72.1
Jul-16	17.2	13.6	11.9	8.5	3.8	2.4	1.9	1.0	1.2	1.0	0.6	6.7	69.7
Aug-16	12.4	9.8	8.5	6.1	2.9	1.7	1.4	0.7	0.9	0.7	0.4	5.1	50.5
Sep-16	17.2	13.6	11.8	8.5	3.8	2.4	1.9	1.0	1.2	1.0	0.5	7.1	70.0
Oct-16	18.0	14.2	12.3	8.8	4.0	2.5	2.0	1.0	1.3	1.0	0.6	7.3	73.0
Nov-16	17.3	13.5	11.7	8.5	3.8	2.4	1.9	1.0	1.2	1.0	0.8	7.2	70.1
Dec-16	13.6	10.7	9.4	6.7	3.0	1.9	1.5	0.7	0.9	0.6	0.6	5.4	55.0
Jan-17	17.7	14.2	12.3	8.8	4.0	2.5	2.0	0.7	0.8	0.5	0.6	7.2	71.4
Feb-17	17.0	13.6	11.8	8.4	3.8	2.4	1.9	0.66	0.73	0.56	0.7	6.8	68.2
Mar-17	17.0	13.7	11.9	8.5	3.9	2.4	2.0	0.66	0.73	0.57	0.7	6.9	68.8
Apr-17	12.5	11.3	9.8	6.6	3.0	2.0	1.6	0.5	0.7	0.5	0.5	5.4	54.3
May-17	11.9	10.8	9.4	6.0	2.6	1.9	1.5	0.5	0.6	0.5	0.5	5.2	51.5
Jun-17	11.9	10.8	9.3	6.2	2.7	1.9	1.5	0.5	0.6	0.5	0.5	5.2	51.6
Jul-17	12.2	10.1	9.6	6.3	2.7	1.9	1.5	0.5	0.7	0.6	0.5	5.3	51.9
Aug-17	9.8	9.3	7.7	5.1	2.2	1.5	1.2	0.4	0.5	0.5	0.3	4.3	42.8
Sep-17	11.7	11.1	9.2	6.1	2.6	1.9	1.5	0.5	0.2	0.6	0.5	5.1	50.8
Total flow	425.5	345.6	300.6	212.3	95.3	60.2	47.8	29.6	26.9	23.5	24.4	192.6	1784.1
Capital Key	26%	21%	18%	13%	6%	4%	3%	3%	2%	2%			

Source: Citi Research, ECB

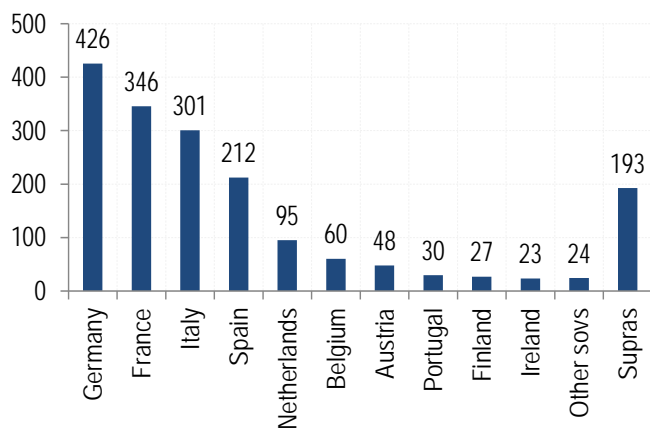
Figure 48. Monthly ECB QE Tracker – Maturities of portfolio holdings

MATURITIES (yrs)	Germany	France	Italy	Spain	Netherlands	Belgium	Austria	Portugal	Finland	Ireland	Supras	PSPP
Mar-15	8.1	8.2	9.1	11.7	6.7	8.8	7.8	11.0	7.3	9.4	7.3	7.3
Apr-15	7.9	7.8	8.4	9.7	7.0	9.1	8.0	10.8	7.2	9.1	8.1	8.1
May-15	7.1	7.8	8.7	9.7	6.9	9.1	7.8	10.8	7.2	9.6	7.8	7.8
Jun-15	6.9	7.8	8.8	9.8	6.8	9.1	7.7	10.6	7.2	9.6	7.4	8.0
Jul-15	6.9	7.9	9.0	9.7	6.7	8.8	7.9	10.6	7.3	9.8	7.2	8.0
Aug-15	7.1	7.9	9.1	9.7	6.6	8.8	8.0	10.8	7.3	9.7	7.1	8.0
Sep-15	7.0	7.8	9.3	9.7	6.6	9.0	8.0	10.9	7.4	9.1	6.9	8.0
Oct-15	7.0	7.8	9.3	9.7	6.6	9.2	8.1	10.6	7.5	9.0	6.9	8.0
Nov-15	7.0	7.8	9.3	9.7	6.6	9.6	8.3	10.6	7.6	9.3	7.1	8.1
Dec-15	7.0	7.7	9.3	9.7	6.5	9.5	8.5	10.4	7.6	9.4	7.0	8.0
Jan-16	7.0	7.7	9.3	9.8	6.5	9.5	8.4	10.2	7.6	9.5	6.9	8.0
Feb-16	7.0	7.7	9.3	9.8	6.7	9.6	8.4	10.1	7.7	9.5	7.0	8.0
Mar-16	7.1	7.7	9.4	9.7	6.9	9.7	8.5	10.2	7.7	9.4	6.9	8.1
Apr-16	7.2	7.7	9.4	9.6	7.2	9.8	8.7	10.2	7.6	9.5	6.8	8.1
May-16	7.3	7.7	9.3	9.7	7.4	9.8	8.7	10.2	7.6	9.4	6.8	8.1
Jun-16	7.4	7.7	9.3	9.7	7.6	9.7	8.9	10.1	7.5	9.4	6.9	8.2
Jul-16	7.6	7.7	9.2	9.7	7.7	9.8	9.1	10.1	7.6	9.3	7.1	8.3
Aug-16	7.7	7.7	9.2	9.6	7.8	9.9	9.2	9.9	7.6	9.3	7.1	8.3
Sep-16	7.9	7.8	9.2	9.6	7.9	10.0	9.3	9.8	7.6	9.4	7.3	8.4
Oct-16	8.0	7.8	9.1	9.5	8.0	10.1	9.4	9.8	7.7	9.4	7.2	8.4
Nov-16	8.1	7.7	9.0	9.4	8.0	10.0	9.3	9.7	7.4	9.2	7.3	8.3
Dec-16	8.2	7.7	8.9	9.3	8.0	10.0	9.3	9.5	7.4	9.2	7.3	8.3
Jan-17	8.2	7.7	8.9	9.1	8.0	10.1	9.3	9.4	7.4	9.1	7.3	8.3
Feb-17	7.9	7.7	8.8	8.9	7.9	10.0	9.3	9.3	7.3	9.0	7.4	8.2
Mar-17	7.7	7.6	8.7	8.8	7.8	10.1	9.3	9.2	7.3	8.9	7.4	8.1
Apr-17	7.5	7.6	8.7	8.7	7.8	10.2	9.3	9.1	7.3	8.8	7.4	8.0
May-17	7.3	7.7	8.6	8.6	7.7	10.2	9.3	9.0	7.4	8.8	7.4	8.0
Jun-17	7.1	7.6	8.5	8.5	7.6	10.2	9.2	8.9	7.2	8.7	7.4	7.9
Jul-17	7.0	7.8	8.6	8.5	7.7	10.3	9.2	8.7	7.3	8.7	7.5	7.9
Aug-17	6.9	7.7	8.5	8.5	7.6	10.2	9.2	8.6	7.2	8.7	7.5	7.9
Sep-17	6.8	7.7	8.4	8.4	7.6	10.3	9.1	8.6	7.5	8.6	7.6	7.8

Source: Citi Research, ECB

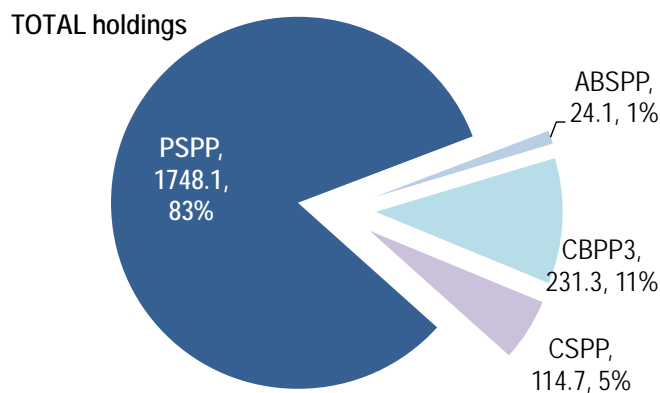
The charts below indicate total holdings at the ECB.

Figure 49. Total PSPP buying flows by sovereign (€bn)



Source: Citi Research, ECB

Figure 50. Total QE holdings (€bn)



Source: Citi Research, ECB

EMU Spread Heatmaps

■ We present six cross-country heatmaps based on 3-month Z-scores (Figure 51 to Figure 56). A positive Z-score indicates that current spread is 'cheap' and a negative Z-score indicates 'richness'. Countries that don't have benchmarks in a particular sector have been shaded grey (e.g. 15yr Austria).

- All spreads have been calculated on the basis of on-the-run benchmarks.
- Blue color indicates that the current spread is trading historically cheap while red color indicates that the current spread is trading historically rich.
- For better identification of rich/cheap spreads, we have highlighted cells which have a **Z-Score of greater than 2 or less than -2 in bold italics**.

Figure 51. 3 Year

		Sell									
		DEU	NLD	AUT	FIN	BEL	FRA	IRL	ITA	ESP	PRT
Buy	DEU	0	2.2	1.8	2.2	2.0	2.9	2.7	1.7	0.0	1.5
	NLD	-2.2	0	0.3	-1.3	0.3	0.4	2.0	1.2	-0.6	0.8
	AUT	-1.8	-0.3	0	-0.9	0.1	0.1	2.3	1.3	-0.6	0.8
	FIN	-2.2	1.3	0.9	0	1.1	1.7	2.3	1.4	-0.4	1.1
	BEL	-2.0	-0.3	-0.1	-1.1	0	0.0	1.7	1.0	-0.8	1.0
	FRA	-2.9	-0.4	-0.1	-1.7	0.0	0	1.7	1.0	-0.7	0.8
	IRL	-2.7	-2.0	-2.3	-2.3	-1.7	-1.7	0	0.2	-1.1	0.0
	ITA	-1.7	-1.2	-1.3	-1.4	-1.0	-1.0	-0.2	0	-1.0	-0.1
	ESP	0.0	0.6	0.6	0.4	0.8	0.7	1.1	1.0	0	1.3
	PRT	-1.5	-0.8	-0.8	-1.1	-1.0	-0.8	0.0	0.1	-1.3	0

Source: Citi Research

Figure 52. 5 Year

		Sell									
		DEU	NLD	AUT	FIN	BEL	FRA	IRL	ITA	ESP	PRT
Buy	DEU	0	0.5	1.6	0.5	1.6	1.4	1.1	2.4	-0.3	1.8
	NLD	-0.5	0	1.4	0.4	1.0	0.9	0.8	2.4	-0.4	1.7
	AUT	-1.6	-1.4	0	-1.2	-0.8	-0.7	0.0	2.5	-0.7	1.7
	FIN	-0.5	-0.4	1.2	0	0.5	0.5	0.5	2.6	-0.5	1.7
	BEL	-1.6	-1.0	0.8	-0.5	0	0.0	0.5	2.4	-0.5	1.7
	FRA	-1.4	-0.9	0.7	-0.5	0.0	0	0.5	2.5	-0.5	1.7
	IRL	-1.1	-0.8	0.0	-0.5	-0.5	-0.5	0	2.4	-0.6	1.8
	ITA	-2.4	-2.4	-2.5	-2.6	-2.4	-2.5	-2.4	0	-1.8	0.7
	ESP	0.3	0.4	0.7	0.5	0.5	0.5	0.6	1.8	0	1.6
	PRT	-1.8	-1.7	-1.7	-1.7	-1.7	-1.7	-1.8	-0.7	-1.6	0

Source: Citi Research

Figure 53. 7 Year

		Sell									
		DEU	NLD	AUT	FIN	BEL	FRA	IRL	ITA	ESP	PRT
Buy	DEU	0	1.2	0.4	1.6	1.4	1.7	1.5	2.5	0.2	1.6
	NLD	-1.2	0	-0.4	0.7	0.6	1.0	1.3	2.7	0.0	1.5
	AUT	-0.4	0.4	0	0.9	0.7	1.0	1.3	2.8	0.1	1.6
	FIN	-1.6	-0.7	-0.9	0	0.2	0.2	1.1	2.3	-0.2	1.5
	BEL	-1.4	-0.6	-0.7	-0.2	0	0.0	1.3	2.2	-0.2	1.6
	FRA	-1.7	-1.0	-1.0	-0.2	0.0	0	1.3	2.5	-0.3	1.5
	IRL	-1.5	-1.3	-1.3	-1.1	-1.3	-1.3	0	2.0	-0.6	1.6
	ITA	-2.5	-2.7	-2.8	-2.3	-2.2	-2.5	-2.0	0	-2.0	1.0
	ESP	-0.2	0.0	-0.1	0.2	0.2	0.3	0.6	2.0	0	1.4
	PRT	-1.6	-1.5	-1.6	-1.5	-1.6	-1.5	-1.6	-1.0	-1.4	0

Source: Citi Research

Figure 54. 10 Year

		Sell									
		DEU	NLD	AUT	FIN	BEL	FRA	IRL	ITA	ESP	PRT
Buy	DEU	0	1.3	0.4	1.4	1.6	1.4	1.7	1.9	0.5	1.5
	NLD	-1.3	0	-0.4	0.6	1.4	1.2	1.6	2.0	0.3	1.5
	AUT	-0.4	0.4	0	0.6	1.4	1.3	1.6	2.2	0.4	1.5
	FIN	-1.4	-0.6	-0.6	0	1.2	0.5	1.8	1.7	0.1	1.5
	BEL	-1.6	-1.4	-1.4	-1.2	0	-0.6	1.6	1.6	-0.1	1.4
	FRA	-1.4	-1.2	-1.3	-0.5	0.6	0	1.6	1.9	0.0	1.4
	IRL	-1.7	-1.6	-1.6	-1.8	-1.6	-1.6	0	1.1	-0.5	1.4
	ITA	-1.9	-2.0	-2.2	-1.7	-1.6	-1.9	-1.1	0	-2.0	0.9
	ESP	-0.5	-0.3	-0.4	-0.1	0.1	0.0	0.5	2.0	0	1.2
	PRT	-1.5	-1.5	-1.5	-1.5	-1.4	-1.4	-1.4	-0.9	-1.2	0

Source: Citi Research

Figure 55. 15 Year (no current benchmark for Austria)

		Sell									
		DEU	NLD	AUT	FIN	BEL	FRA	IRL	ITA	ESP	PRT
Buy	DEU	0	-0.3		1.5	1.9	1.2	1.7	1.8	0.9	1.7
	NLD	0.3	0		2.2	2.7	1.9	2.0	2.1	1.1	1.7
	AUT										
	FIN	-1.5	-2.2		0	1.4	0.0	1.5	1.4	0.3	1.7
	BEL	-1.9	-2.7		-1.4	0	-2.0	0.9	1.2	0.0	1.6
	FRA	-1.2	-1.9		0.0	2.0	0	1.5	1.7	0.4	1.6
	IRL	-1.7	-2.0		-1.5	-0.9	-1.5	0	0.7	-0.3	1.6
	ITA	-1.8	-2.1		-1.4	-1.2	-1.7	-0.7	0	-1.4	1.1
	ESP	-0.9	-1.1		-0.3	0.0	-0.4	0.3	1.4	0	1.3
PRT	-1.7	-1.7		-1.7	-1.6	-1.6	-1.6	-1.1	-1.3	0	

Source: Citi Research

Figure 56. 30 Year

		Sell									
		DEU	NLD	AUT	FIN	BEL	FRA	IRL	ITA	ESP	PRT
Buy	DEU	0	-2.6	-0.1	0.4	1.3	1.1	1.8	2.1	1.0	1.4
	NLD	2.6	0	0.5	2.3	1.7	1.4	2.0	2.2	1.2	1.5
	AUT	0.1	-0.5	0	0.2	1.5	1.2	1.9	2.2	1.2	1.4
	FIN	-0.4	-2.3	-0.2	0	1.4	1.1	1.9	2.1	1.0	1.4
	BEL	-1.3	-1.7	-1.5	-1.4	0	-0.9	1.3	1.8	0.4	1.3
	FRA	-1.1	-1.4	-1.2	-1.1	0.9	0	1.8	2.2	0.6	1.4
	IRL	-1.8	-2.0	-1.9	-1.9	-1.3	-1.8	0	1.3	-0.2	1.2
	ITA	-2.1	-2.2	-2.2	-2.1	-1.8	-2.2	-1.3	0	-1.7	0.5
	ESP	-1.0	-1.2	-1.2	-1.0	-0.4	-0.6	0.2	1.7	0	1.0
	PRT	-1.4	-1.5	-1.4	-1.4	-1.3	-1.4	-1.2	-0.5	-1.0	0

Source: Citi Research

Euro Relative Value Screen – All Maturities

Figure 57. Coupon adjusted spread (CAS) to fitted curve and swap curve by country (6m history) - all bonds on each curve

		Versus Govt Curve (CAS)					Versus Swap Curve (CAS)					
		Rank		ZScore	Issued	Size (€bn)	Rank		ZScore	Issued	Size (€bn)	
GERMANY	Richest	1	1.00 Aug25	-1.88	Jul15	23	Richest	1	2.50 Jul44	1.04	Apr12	22
		2	0.50 Feb26	-1.86	Jan16	26		2	2.50 Aug46	1.07	Feb14	23
		3	2.50 Jul44	-1.76	Apr12	22		3	3.25 Jul42	1.27	Jul10	15
		4	3.25 Jul42	-1.55	Jul10	15		4	0.50 Aug27	1.36	Jul17	20
		5	0.00 Aug26	-1.46	Jul16	25		5	4.75 Jul40	1.84	Jul08	16
	Cheapest	5	1.00 Aug24	1.42	Sep14	18		5	1.50 May23	3.59	May13	18
		4	2.50 Aug46	1.49	Feb14	23		4	1.50 May24	3.71	May14	18
		3	0.00 Apr21	1.87	Feb16	21		3	2.00 Aug23	3.71	Sep13	18
		2	0.00 Apr20	2.17	Jan15	20		2	1.00 Aug24	3.78	Sep14	18
		1	1.75 Feb24	2.39	Jan14	18		1	1.75 Feb24	4.12	Jan14	18
FRANCE	Richest	1	0.50 May26	-3.07	Mar16	28	Richest	1	1.75 May66	-0.59	Apr16	7
		2	0.50 May25	-2.22	Feb15	33		2	4.00 Apr60	-0.37	Mar10	8
		3	3.50 Apr26	-2.02	Jul10	36		3	3.25 May45	-0.29	Apr13	25
		4	0.25 Nov26	-2.01	Sep16	28		4	4.00 Apr55	-0.26	Feb05	15
		5	1.00 Nov25	-1.95	Sep15	28		5	4.50 Apr41	-0.24	Jun09	33
	Cheapest	5	3.25 May45	0.85	Apr13	25		5	0.00 May20	2.50	Feb15	23
		4	4.00 Apr60	0.90	Mar10	8		4	3.75 Apr21	2.52	May05	39
		3	1.50 May31	1.15	Oct15	34		3	0.00 May21	2.94	Apr16	24
		2	0.25 Nov20	1.28	Sep15	25		2	2.50 Oct20	3.00	Oct10	37
		1	4.00 Apr55	1.40	Feb05	15		1	0.25 Nov20	3.05	Sep15	25
ITALY	Richest	1	4.50 Feb20 (BTS)	-2.47	Mar04	23	Richest	1	2.80 Mar67	-1.93	Oct16	6
		2	2.50 Dec24	-2.20	Sep14	20		2	3.25 Sep46	-1.38	Jan15	16
		3	4.25 Mar20	-2.15	Oct09	24		3	2.70 Mar47	-1.28	Feb16	16
		4	1.05 Dec19	-1.96	Dec14	15		4	4.75 Sep44	-1.22	May13	17
		5	2.05 Aug27	-1.92	Jul17	13		5	3.45 Mar48	-1.13	Jun17	8
	Cheapest	5	0.95 Mar23	1.47	Mar16	16		5	1.25 Dec26	-0.64	Aug16	18
		4	1.65 Mar32	1.54	Mar15	22		4	3.75 Mar21	-0.59	Sep10	24
		3	1.25 Dec26	1.68	Aug16	18		3	0.65 Nov20	-0.56	Nov15	15
		2	0.35 Nov21	2.10	Oct16	14		2	1.05 Dec19	-0.53	Dec14	15
		1	1.35 Apr22	3.12	Feb15	18		1	1.65 Mar32	-0.53	Mar15	22
N'LANDS	Richest	1	0.25 Jul25	-3.64	Mar15	15	Richest	1	3.75 Jan42	1.49	May10	15
		2	2.00 Jul24	-2.38	Mar14	15		2	2.75 Jan47	1.54	Feb14	13
		3	3.75 Jan42	-2.18	May10	15		3	3.50 Jul20	2.17	Feb10	15
		4	1.75 Jul23	-1.55	Mar13	16		4	4.00 Jan37	2.24	Apr05	15
		5	3.75 Jan23	-1.39	Feb06	4		5	0.75 Jul27	2.33	Feb17	13
	Cheapest	5	0.75 Jul27		Feb17	13		5	0.00 Jan22	3.28	Jun16	15
		4	0.25 Jan20		Sep14	15		4	2.25 Jul22	3.40	Feb12	15
		3	2.50 Jan33	1.02	Mar12	14		3	3.75 Jan23	3.43	Feb06	4
		2	2.75 Jan47	1.56	Feb14	13		2	2.00 Jul24	3.67	Mar14	15
		1	3.25 Jul21	1.82	Mar11	16		1	1.75 Jul23	3.84	Mar13	16
SPAIN	Richest	1	3.45 Jul66	-3.31	May16	6	Richest	1	3.45 Jul66	-0.99	May16	6
		2	5.15 Oct44	-2.21	Oct13	13		2	2.90 Oct46	-0.24	Mar16	13
		3	4.70 Jul41	-2.13	Sep09	17		3	5.15 Oct44	-0.24	Oct13	13
		4	2.15 Oct25	-2.02	Jun15	21		4	4.70 Jul41	-0.21	Sep09	17
		5	4.30 Oct19	-2.02	Jun09	21		5	4.90 Jul40	-0.13	Jun07	16
	Cheapest	5	1.30 Oct26 (FBB)	0.73	Jul16	23		5	4.00 Apr20	2.94	Jan10	23
		4	5.50 Apr21	0.75	Jan11	24		4	5.50 Apr21	2.95	Jan11	24
		3	5.40 Jan23	1.24	Jan13	22		3	1.15 Jul20	3.03	Jun15	19
		2	5.15 Oct28	1.26	Jul13	18		2	0.05 Jan21	3.06	Jun17	7
		1	2.90 Oct46	2.44	Mar16	13		1	4.85 Oct20	3.15	Jul10	18
BELGIUM	Richest	1	4.25 Sep21	-1.69	Jan11	17	Richest	1	2.15 Jun66	-0.91	May16	3
		2	3.75 Sep20	-1.68	Jan10	19		2	2.25 Jun57	-0.74	Feb17	3
		3	3.75 Jun45	-1.52	Sep13	10		3	3.75 Jun45	-0.44	Sep13	10
		4	0.50 Oct24	-1.11	Feb17	5		4	1.60 Jun47	-0.35	Mar16	9
		5	1.45 Jun37	-1.00	May17	3		5	4.25 Mar41	-0.23	Apr10	17
	Cheapest	5	5.00 Mar35	0.89	May04	20		5	4.25 Sep21	2.18	Jan11	17
		4	1.90 Jun38	1.10	Sep15	7		4	0.20 Oct23	2.24	May16	6
		3	1.60 Jun47	1.21	Mar16	9		3	4.00 Mar22	2.48	May06	14
		2	3.00 Jun34	1.89	Mar14	7		2	4.25 Sep22	2.48	Jan12	16
		1	0.20 Oct23	2.21	May16	6		1	3.75 Sep20	2.53	Jan10	16

Source: Citi Research

Euro Relative Value Screen – Sub-12yr

Figure 58. Coupon adjusted spread (CAS) to fitted curve and swap curve by country (6m history) - bonds with a maximum maturity of 12yrs

Versus Govt Curve (CAS)							Versus Swap Curve (CAS)						
	Rank			ZScore	Issued	Size (€bn)		Rank			ZScore	Issued	Size (€bn)
GERMANY	Richest	1	1.00 Aug25	-1.88	Jul15	23	Richest	1	0.50 Aug27	1.36	Jul17	20	
		2	0.50 Feb26	-1.86	Jan16	26		2	3.25 Jan20	2.04	Nov09	22	
		3	0.00 Aug26	-1.46	Jul16	25		3	0.00 Oct21	2.40	Jul16	19	
		4	0.00 Apr22	-1.16	Feb17	18		4	3.00 Jul20	2.44	Apr10	22	
		5	0.25 Feb27	-1.14	Jan17	26		5	2.25 Sep20	2.54	Aug10	16	
	Cheapest	5	2.00 Aug23	1.40	Sep13	18		5	1.50 May23	3.59	May13	18	
		4	1.00 Aug24	1.42	Sep14	18		4	1.50 May24	3.71	May14	18	
		3	0.00 Apr21	1.87	Feb16	21		3	2.00 Aug23	3.71	Sep13	18	
		2	0.00 Apr20	2.17	Jan15	20		2	1.00 Aug24	3.78	Sep14	18	
		1	1.75 Feb24	2.39	Jan14	18		1	1.75 Feb24	4.12	Jan14	18	
FRANCE	Richest	1	0.50 May26	-3.07	Mar16	28	Richest	1	3.50 Apr26	0.39	Jul10	36	
		2	0.50 May25	-2.22	Feb15	33		2	2.75 Oct27 (OAT)	0.41	Sep12	37	
		3	3.50 Apr26	-2.02	Jul10	36		3	0.50 May26	0.43	Mar16	28	
		4	0.25 Nov26	-2.01	Sep16	28		4	0.25 Nov26	0.47	Sep16	28	
		5	1.00 Nov25	-1.95	Sep15	28		5	1.00 Nov25	0.52	Sep15	28	
	Cheapest	5	0.00 May20	0.42	Feb15	23		5	0.00 May20	2.50	Feb15	23	
		4	1.75 Nov24	0.45	Jun14	36		4	3.75 Apr21	2.52	May05	39	
		3	2.50 Oct20	0.55	Oct10	37		3	0.00 May21	2.94	Apr16	24	
		2	2.25 Oct22 (BTA)	0.82	Oct12	32		2	2.50 Oct20	3.00	Oct10	37	
		1	0.25 Nov20	1.28	Sep15	25		1	0.25 Nov20	3.05	Sep15	25	
ITALY	Richest	1	4.50 Feb20 (BTS)	-2.47	Mar04	23	Richest	1	4.50 Mar24	-1.08	Aug13	23	
		2	2.50 Dec24	-2.20	Sep14	20		2	1.45 Sep22	-1.07	Sep15	17	
		3	4.25 Mar20	-2.15	Oct09	24		3	1.85 May24	-1.07	Mar17	15	
		4	1.05 Dec19	-1.96	Dec14	15		4	5.00 Mar22	-1.05	Sep11	21	
		5	2.05 Aug27	-1.92	Jul17	13		5	2.50 Dec24	-1.05	Sep14	20	
	Cheapest	5	1.50 Jun25	1.29	Mar15	20		5	4.00 Sep20	-0.65	Apr10	25	
		4	0.95 Mar23	1.47	Mar16	16		4	1.25 Dec26	-0.64	Aug16	18	
		3	1.25 Dec26	1.68	Aug16	18		3	3.75 Mar21	-0.59	Sep10	24	
		2	0.35 Nov21	2.10	Oct16	14		2	0.65 Nov20	-0.56	Nov15	15	
		1	1.35 Apr22	3.12	Feb15	18		1	1.05 Dec19	-0.53	Dec14	15	
N'LANDS	Richest	1	0.25 Jul25	-3.64	Mar15	15	Richest	1	3.50 Jul20	2.17	Feb10	15	
		2	2.00 Jul24	-2.38	Mar14	15		2	0.75 Jul27	2.33	Feb17	13	
		3	1.75 Jul23	-1.53	Mar13	16		3	0.25 Jan20	2.35	Sep14	15	
		4	3.75 Jan23	-1.39	Feb06	4		4	0.50 Jul26	2.95	Mar16	15	
		5	0.50 Jul26	-1.28	Mar16	15		5	3.25 Jul21	3.03	Mar11	16	
	Cheapest	5	3.50 Jul20		Feb10	15		5	0.00 Jan22	3.28	Jun16	15	
		4	2.25 Jul22		Feb12	15		4	2.25 Jul22	3.40	Feb12	15	
		3	0.75 Jul27	0.73	Feb17	13		3	3.75 Jan23	3.43	Feb06	4	
		2	0.25 Jan20	0.80	Sep14	15		2	2.00 Jul24	3.67	Mar14	15	
		1	3.25 Jul21	1.82	Mar11	16		1	1.75 Jul23	3.85	Mar13	16	
SPAIN	Richest	1	2.15 Oct25	-2.02	Jun15	21	Richest	1	4.65 Jul25	0.40	Feb10	23	
		2	4.30 Oct19	-2.02	Jun09	21		2	2.15 Oct25	0.56	Jun15	21	
		3	1.60 Apr25	-1.75	Jan15	20		3	1.60 Apr25	0.60	Jan15	20	
		4	2.75 Oct24	-1.62	Jun14	24		4	2.75 Oct24	0.63	Jun14	24	
		5	4.65 Jul25	-1.58	Feb10	23		5	5.90 Jul26 (KOA)	0.68	Mar11	19	
	Cheapest	5	1.15 Jul20	0.63	Jun15	19		5	4.00 Apr20	2.94	Jan10	23	
		4	1.30 Oct26 (FBB)	0.73	Jul16	23		4	5.50 Apr21	2.95	Jan11	24	
		3	5.50 Apr21	0.75	Jan11	24		3	1.15 Jul20	3.03	Jun15	19	
		2	5.40 Jan23	1.24	Jan13	22		2	0.05 Jan21	3.06	Jun17	7	
		1	5.15 Oct28	1.26	Jul13	18		1	4.85 Oct20	3.15	Jul10	18	
BELGIUM	Richest	1	4.25 Sep21	-1.69	Jan11	17	Richest	1	0.80 Jun27	0.95	Jan17	14	
		2	3.75 Sep20	-1.68	Jan10	19		2	1.00 Jun26	1.13	Jan16	14	
		3	0.50 Oct24	-1.11	Feb17	5		3	4.50 Mar26	1.22	Jun11	11	
		4	2.60 Jun24	-0.62	Jan14	16		4	0.80 Jun25	1.36	Jan15	16	
		5	0.80 Jun27	0.20	Jan17	14		5	0.50 Oct24	1.49	Feb17	5	
	Cheapest	5	2.25 Jun23	0.29	Jan13	14		5	4.25 Sep21	2.18	Jan11	17	
		4	4.00 Mar22	0.36	May06	14		4	0.20 Oct23	2.24	May16	6	
		3	0.80 Jun25	0.71	Jan15	16		3	4.00 Mar22	2.48	May06	14	
		2	4.25 Sep22	0.85	Jan12	16		2	4.25 Sep22	2.48	Jan12	16	
		1	0.20 Oct23	2.21	May16	6		1	3.75 Sep20	2.53	Jan10	14	

Source: Citi Research

Euro Relative Value Screen – 8yr+

Figure 59. Coupon adjusted spread (CAS) to fitted curve and swap curve by country (6m history) - bonds with a minimum maturity of 8yrs

		Versus Govt Curve (CAS)						Versus Swap Curve (CAS)					
		Rank		ZScore	Issued	Size (€bn)		Rank		ZScore	Issued	Size (€bn)	
GERMANY	Richest	1	0.50 Feb26	-1.86	Jan16	26		1	2.50 Jul44	1.04	Apr12	22	
		2	2.50 Jul44	-1.76	Apr12	22		2	2.50 Aug46	1.07	Feb14	23	
		3	3.25 Jul42	-1.55	Jul10	15		3	3.25 Jul42	1.27	Jul10	15	
		4	0.00 Aug26	-1.46	Jul16	25		4	0.50 Aug27	1.36	Jul17	20	
		5	0.25 Feb27	-1.14	Jan17	26		5	4.75 Jul40	1.84	Jul08	16	
	Cheapest	5	6.25 Jan30	0.88	Jan00	9		5	0.00 Aug26	2.99	Jul16	25	
		4	4.00 Jan37	0.98	Jan05	23		4	0.50 Feb26	3.12	Jan16	26	
		3	5.50 Jan31	1.07	Oct00	17		3	0.25 Feb27	3.13	Jan17	26	
		2	4.75 Jul34	1.11	Jan03	20		2	5.50 Jan31	3.19	Oct00	17	
		1	2.50 Aug46	1.49	Feb14	23		1	6.25 Jan30	3.27	Jan00	9	
FRANCE	Richest	1	0.50 May26	-3.07	Mar16	28		1	1.75 May66	-0.59	Apr16	7	
		2	3.50 Apr26	-2.02	Jul10	36		2	4.00 Apr60	-0.37	Mar10	8	
		3	0.25 Nov26	-2.01	Sep16	28		3	3.25 May45	-0.29	Apr13	25	
		4	1.00 Nov25	-1.95	Sep15	28		4	4.00 Apr55	-0.26	Feb05	15	
		5	2.75 Oct27 (OAT)	-1.54	Sep12	37		5	4.50 Apr41	-0.24	Jun09	33	
	Cheapest	5	2.50 May30	0.63	May14	33		5	0.25 Nov26	0.47	Sep16	28	
		4	3.25 May45	0.85	Apr13	25		4	1.50 May31	0.50	Oct15	34	
		3	4.00 Apr60	0.90	Mar10	8		3	1.00 Nov25	0.52	Sep15	28	
		2	1.50 May31	1.15	Oct15	34		2	1.00 May27	0.53	Apr17	31	
		1	4.00 Apr55	1.40	Feb05	15		1	2.50 May30	0.63	May14	33	
ITALY	Richest	1	2.05 Aug27	-1.93	Jul17	13		1	2.80 Mar67	-1.93	Oct16	6	
		2	3.25 Sep46	-1.43	Jan15	16		2	3.25 Sep46	-1.38	Jan15	16	
		3	4.75 Sep44	-1.09	May13	17		3	2.70 Mar47	-1.28	Feb16	16	
		4	4.75 Sep28 (IK)	-1.07	Jan13	22		4	4.75 Sep44	-1.22	May13	17	
		5	5.75 Feb33	-1.00	Mar02	19		5	3.45 Mar48	-1.13	Jun17	8	
	Cheapest	5	2.00 Dec25	0.59	Sep15	18		5	6.00 May31	-0.72	Mar00	30	
		4	3.45 Mar48	0.71	Jun17	8		4	3.50 Mar30	-0.72	May14	23	
		3	2.25 Sep36	0.86	Apr16	15		3	2.05 Aug27	-0.69	Jul17	13	
		2	1.65 Mar32	1.53	Mar15	22		2	1.25 Dec26	-0.64	Aug16	18	
		1	1.25 Dec26	1.67	Aug16	18		1	1.65 Mar32	-0.53	Mar15	22	
N'LANDS	Richest	1	3.75 Jan42	-2.20	May10	15		1	3.75 Jan42	1.48	May10	15	
		2	4.00 Jan37	-1.36	Apr05	15		2	2.75 Jan47	1.54	Feb14	13	
		3	0.50 Jul26	-1.28	Mar16	15		3	4.00 Jan37	2.24	Apr05	15	
	Cheapest	3	0.75 Jul27	0.73	Feb17	13		3	0.75 Jul27	2.33	Feb17	13	
		2	2.50 Jan33	1.01	Mar12	14		2	0.50 Jul26	2.95	Mar16	15	
SPAIN	Richest	1	3.45 Jul66	-3.10	May16	6		1	3.45 Jul66	-0.99	May16	6	
		2	5.15 Oct44	-2.23	Oct13	13		2	5.15 Oct44	-0.24	Oct13	13	
		3	4.70 Jul41	-2.13	Sep09	17		3	2.90 Oct46	-0.24	Mar16	13	
		4	2.15 Oct25	-2.01	Jun15	21		4	4.70 Jul41	-0.21	Sep09	17	
		5	4.20 Jan37	-1.47	Jan05	20		5	4.90 Jul40	-0.13	Jun07	16	
	Cheapest	5	1.95 Apr26	0.42	Jan16	20		5	1.95 Apr26	0.76	Jan16	20	
		4	2.35 Jul33	0.50	Mar17	7		4	1.50 Apr27	0.78	Jan17	18	
		3	1.30 Oct26 (FBB)	0.74	Jul16	23		3	1.30 Oct26 (FBB)	0.83	Jul16	23	
		2	5.15 Oct28	1.26	Jul13	18		2	5.15 Oct28	1.03	Jul13	18	
		1	2.90 Oct46	2.42	Mar16	13		1	1.45 Oct27	1.49	Jul17	14	
BELGIUM	Richest	1	3.75 Jun45	-1.52	Sep13	10		1	2.15 Jun66	-0.91	May16	3	
		2	1.45 Jun37	-1.01	May17	3		2	2.25 Jun57	-0.74	Feb17	3	
		3	4.00 Mar32	-1.00	Mar12	8		3	3.75 Jun45	-0.44	Sep13	10	
		4	2.25 Jun57	-0.95	Feb17	3		4	1.60 Jun47	-0.35	Mar16	9	
		5	1.00 Jun31	-0.95	Feb15	10		5	4.25 Mar41	-0.23	Apr10	17	
	Cheapest	5	2.15 Jun66	0.55	May16	3		5	5.00 Mar35	0.54	May04	20	
		4	5.00 Mar35	0.88	May04	20		4	3.00 Jun34	0.75	Mar14	7	
		3	1.90 Jun38	1.10	Sep15	7		3	0.80 Jun27	0.95	Jan17	14	
		2	1.60 Jun47	1.19	Mar16	9		2	1.00 Jun26	1.13	Jan16	14	
		1	3.00 Jun34	1.87	Mar14	7		1	4.50 Mar26	1.22	Jun11	11	

Source: Citi Research

UK Relative Value Screen

Figure 60. Coupon adjusted spread (CAS) to fitted curve and swap curve by maturity (6m history)

		Versus Govt Curve (CAS)					Versus Swap Curve (CAS)				
		Rank		ZScore	Issued	Size (£bn)	Rank		ZScore	Issued	Size (£bn)
ALL	Richest	1	5.00 Mar18	-2.42	May07	35	1	5.00 Mar18	0.95	May07	35
		2	4.25 Dec46	-1.86	May06	23	2	3.50 Jul68	1.08	Jun13	19
		3	4.25 Dec55	-1.68	May05	26	3	2.50 Jul65	1.16	Oct15	19
		4	3.75 Sep19	-1.60	Jul09	29	4	1.75 Jul57	1.84	Jan17	10
		5	4.25 Sep39	-1.56	Mar09	23	5	4.00 Jan60	1.86	Oct09	23
		5	4.25 Dec27	1.25	Sep06	31	5	2.25 Sep23	5.53	Jun13	27
		4	1.25 Jul18	1.25	Feb13	35	4	1.75 Sep22	5.65	Jun12	29
		3	1.50 Jul47	1.30	Sep16	20	3	5.00 Mar25	5.83	Sep01	35
		2	1.50 Jan21	1.47	Sep15	32	2	0.50 Jul22	5.89	Aug16	29
	Cheapest	1					1	2.75 Sep24	6.13	Mar14	27
2yr - 7yr	Richest	1	1.75 Sep22	-1.09	Jun12	29	1	3.75 Sep20	3.02	Jun10	25
		2	0.50 Jul22 (5y)	-0.93	Aug16	29	2	4.75 Mar20	3.28	Mar05	33
		3	0.75 Jul23	-0.67	Jul17	9	3	2.00 Jul20	3.55	Sep14	32
		4	2.25 Sep23	-0.42	Jun13	27	4	1.50 Jan21	4.34	Sep15	32
		5	2.75 Sep24	-0.04	Mar14	27	5	3.75 Sep21	4.46	Mar11	28
		5	4.00 Mar22 (WX)	0.47	Feb09	38	5	0.75 Jul23	4.98	Jul17	9
		4	3.75 Sep20	0.80	Jun10	25	4	2.25 Sep23	5.52	Jun13	27
		3	2.00 Jul20	1.03	Sep14	32	3	1.75 Sep22	5.63	Jun12	29
		2	3.75 Sep21	1.03	Mar11	28	2	0.50 Jul22 (5y)	5.88	Aug16	29
	Cheapest	1	1.50 Jan21	1.35	Sep15	32	1	2.75 Sep24	6.12	Mar14	27
7yr - 15yr	Richest	1	1.25 Jul27	-0.67	Mar17	18	1	4.25 Dec27 (10y-G)	4.41	Sep06	31
		2	1.50 Jul26	-0.51	Feb16	27	2	4.25 Jun32	4.84	May00	35
		3	4.25 Jun32	0.03	May00	35	3	1.50 Jul26	4.92	Feb16	27
		4					4				
		5					5				
		4					4				
		3	2.00 Sep25	0.87	Mar15	28	3	2.00 Sep25	5.27	Mar15	28
		2	4.25 Dec27 (10y-G)	1.22	Sep06	31	2	1.25 Jul27	5.36	Mar17	18
		1	5.00 Mar25	1.67	Sep01	35	1	5.00 Mar25	5.82	Sep01	35
	Cheapest	1					1				
>15yr	Richest	1	4.25 Dec46	-1.98	May06	23	1	3.50 Jul68	1.07	Jun13	19
		2	4.25 Dec55	-1.77	May05	26	2	2.50 Jul65	1.15	Oct15	19
		3	4.25 Sep39	-1.63	Mar09	23	3	1.75 Jul57	1.83	Jan17	10
		4	4.00 Jan60	-1.54	Oct09	23	4	4.00 Jan60	1.84	Oct09	23
		5	4.25 Mar36	-1.46	Feb03	30	5	4.25 Dec55	2.04	May05	26
		5	1.75 Jul57	-0.52	Jan17	10	5	4.50 Dec42	3.26	Jun07	27
		4	4.50 Dec42	-0.51	Jun07	27	4	4.75 Dec38	3.46	Apr04	25
		3	2.50 Jul65	-0.01	Oct15	19	3	1.75 Sep37	3.61	Nov16	10
		2	1.75 Sep37	0.85	Nov16	10	2	4.25 Mar36	3.95	Feb03	30
	Cheapest	1					1	4.50 Sep34	4.44	Jun09	32

Source: Citi Research

4 Week Auction Calendar: Euro, UK and US

Figure 61. Auction calendar for the next four weeks (provisional): gross issuance (local currency, billions) and DV01 (USD million/bp)*

Date	Country	Nominal Size (Local Ccy, bn)	Issue Details	DV01 \$million/bp	Approx. Number 10yr Futures		
					TYZ7 (UST)	G Z7 (Gilt)	RXZ7 (Bund)
30 Oct (Mon)	Italy	5.0	BTP 0.9% Aug22 (€2-2.5bn) and 2.05% Aug27 (€2-2.5bn) - issue and indicative size confirmed				22k
30 Oct (Mon)	Italy	3.5	New CCTeu Apr25 (issue confirmed, size €3-3.5bn)				12k
02 Nov (Thu)	France	7.25	OAT >7yr (estimated size)				57k
02 Nov (Thu)	Spain	4.0	Bonos (estimated size)				21k
02 Nov (Thu)	Spain	0.6	SPGBei (estimated)				4k
Weekly \$DV01 of Issuance				19.1			
Total Number of Futures Contracts					0k	0k	115k

Date	Country	Nominal Size (Local Ccy, bn)	Issue Details	DV01 \$million/bp	Approx. Number 10yr Futures		
					TYZ7 (UST)	G Z7 (Gilt)	RXZ7 (Bund)
07 Nov (Tue)	Austria	1.1	RAGB 5yr and 10yr (estimated tenors and size)				6k
07 Nov (Tue)	Germany	0.5	Bundei (estimated size)				5k
07 Nov (Tue)	UK	3.5	Syndicated new IL48 (w/c 6 Nov, estimated size)			249k	
07 Nov (Tue)	US	24.0	New 3-Year		77k		
08 Nov (Wed)	Germany	3.0	Bobl 0% Oct22 (issue and size confirmed)				11k
08 Nov (Wed)	US	23.0	New 10-Year		250k		
09 Nov (Thu)	Ireland	1.0	Ireland (estimated size)				10k
09 Nov (Thu)	UK	2.75	0.75% Treasury gilt 2023 (issue confirmed, estimated size)			15k	
09 Nov (Thu)	US	15.0	New 30-Year		336k		
Weekly \$DV01 of Issuance				93.9			
Total Number of Futures Contracts					664k	264k	31k

Date	Country	Nominal Size (Local Ccy, bn)	Issue Details	DV01 \$million/bp	Approx. Number 10yr Futures		
					TYZ7 (UST)	G Z7 (Gilt)	RXZ7 (Bund)
13 Nov (Mon)	Italy	7.0	BTP 0.2% Oct20, 1.45% Nov24 and >10yr (estimated issue and size)				38k
13 Nov (Mon)	Italy	7.0	New 6yr BTP Italia (13-16 Nov, estimated size)				46k
14 Nov (Tue)	Germany	5.0	New Schatz Dec19 (issue and size confirmed)				7k
14 Nov (Tue)	Netherlands	2.5	DSL 0.75% Jul27 (issue confirmed, size €2-3bn)				17k
15 Nov (Wed)	Germany	3.0	Bund 0.5% Aug27 (issue and size confirmed)				20k
16 Nov (Thu)	France	6.5	OAT 2yr-7yr (estimated size)				18k
16 Nov (Thu)	France	1.5	OAT/iei (estimated size)				10k
16 Nov (Thu)	Spain	4.0	Bonos (estimated size)				28k
16 Nov (Thu)	UK	2.5	1.25% Treasury gilt 2027 (issue confirmed, estimated size)			23k	
16 Nov (Thu)	US	11.0	10-Year TIPS (re-opening)		128k		
Weekly \$DV01 of Issuance				43.8			
Total Number of Futures Contracts					128k	23k	184k

Date	Country	Nominal Size (Local Ccy, bn)	Issue Details	DV01 \$million/bp	Approx. Number 10yr Futures		
					TYZ7 (UST)	G Z7 (Gilt)	RXZ7 (Bund)
20 Nov (Mon)	Belgium	2.2	OLO 10yr and 20yr (estimated tenors and size)				16k
21 Nov (Tue)	UK	1.0	IL26 (issue confirmed, estimated size)			11k	
21 Nov (Tue)	US	13.0	2-Year FRN (re-opening)		42k		
22 Nov (Wed)	Germany	1.0	Bund 1.25% Aug48 (issue and size confirmed)				18k
Weekly \$DV01 of Issuance				10.4			
Total Number of Futures Contracts					42k	11k	34k

* Additional issues expected in November: Finland (re-opening) and Portugal (re-opening).

Source: DMOs, Citi Research

Projected FTSE gilt index changes

Here we present our projections of FTSE conventional and linker indices in 2017.

Figure 62. FTSE Actuaries gilt index: Projected changes due to coupon payments, redemptions and bucket changes²

Date*	Event	Bond	All Stock	0-5	5+	5-10	5-15	10-15	15+
12-Jan-17	Coupon Payment	-	-0.09	-0.01	0.10	0.00	-0.01	-0.02	-0.09
23-Jan-17	Redemption	UKT 1.75% Jan17	0.27	0.16					
16-Feb-17	Coupon Payment	-	0.03	-0.01	0.06	-0.01	0.00	0.00	0.04
24-Feb-17	Coupon Payment	-	0.14	0.02	0.13	0.08	0.06	0.00	0.14
8-Mar-17	Bucket Change	UKT 4% Mar22		0.20	0.46	0.36	0.36		
29-May-17	Coupon Payment	-	0.07	-0.01	0.11	-0.01	0.03	0.15	0.14
8-Jun-17	Bucket Change	UKT 4.25% Jun32					0.53	0.60	0.61
13-Jul-17	Coupon Payment	-	0.03	0.00	0.01	0.00	0.00	0.00	0.03
24-Jul-17	Bucket Change	UKT 0.5% Jul22		0.15	0.30	0.35	0.22		
16-Aug-17	Coupon Payment	-	-0.02	-0.01	-0.03	-0.01	-0.01	0.00	-0.03
25-Aug-17	Redemption	UKT 8.75% Aug17	0.09	0.05					
29-Aug-17	Coupon Payment	-	0.12	0.02	0.11	0.06	0.05	0.01	0.12
7-Sep-17	Redemption	UKT 1% Sep17	0.31	0.17					
8-Sep-17	Bucket Change	UKT 1.75% Sep22		0.13	0.30	0.29	0.28		
28-Nov-17	Coupon Payment	-	0.05	0.00	0.10	0.00	0.06	0.16	0.11
8-Dec-17	Bucket Change	UKT 4.25% Dec27				0.32		0.48	

Source: Citi Research, Bloomberg. * Ex-dividend dates for coupon payment. Changes >0.1 years highlighted in bold.

Figure 63. FTSE Actuaries index-linked gilt index: Projected changes due to coupon payments, redemptions and bucket changes²

Date*	Event	Bond	All Stock	0-5	5yr+	5-15	15+
6-Jan-17	Coupon Payment	-	-0.02	0.00	-0.01	0.00	-0.01
12-Jan-17	Coupon Payment	-	-0.10	-0.01	-0.09	-0.01	-0.07
17-Jan-17	Coupon Payment	-	0.01	0.00	0.00	-0.01	0.01
13-Mar-17	Coupon Payment	-	0.00	0.00	0.00	0.00	0.00
6-Apr-17	Coupon Payment	-	-0.01	-0.01	-0.01	-0.01	-0.01
11-May-17	Coupon Payment	-	-0.01	-0.01	-0.01	-0.01	0.00
12-May-17	Coupon Payment	-	0.00	0.00	0.00	0.00	0.00
6-Jul-17	Coupon Payment	-	-0.01	-0.01	-0.01	-0.01	-0.01
13-Jul-17	Coupon Payment	-	0.00	0.00	0.00	0.00	0.01
17-Jul-17	Coupon Payment	-	0.07	0.00	0.08	0.01	0.08
13-Sep-17	Coupon Payment	-	0.03	-0.01	0.00	0.00	0.03
5-Oct-17	Coupon Payment	-	0.06	-0.01	0.05	0.00	0.04
13-Nov-17	Coupon Payment	-	0.00	0.00	0.00	0.00	0.00
22-Nov-17	Redemption	IL17	0.51	0.62			
23-Nov-17	Bucket Change	IL22 / IL32		0.77	0.97	1.49	0.96

Source: Citi Research, Bloomberg. * Ex-dividend dates for coupon payment. Changes >0.1 years highlighted in bold.

² Several factors like yield level and curve shape affect the calculations and are subject to change. The changes for past dates are realised and also include any change in index duration due to daily change in yield.

EMU: Coupons & Redemptions (Next 3mths)

Figure 64. EMU-11/UK bond redemptions over the next three months (Local currency, bn)

Redemptions = €145bn												
Redemptions	DEU 33	FRA 0	NLD 13	ITA 53	ESP 17	BEL 0	AUT 12	FIN 0	PRT 0	GRC 0	IRL 0	GBR 16
(Tue) 31-Oct-17					16.8							
(Wed) 01-Nov-17				15.7								
(Sun) 12-Nov-17				22.4								
(Wed) 22-Nov-17												16.3
(Fri) 15-Dec-17	13.0											
(Thu) 04-Jan-18	20.0											
(Mon) 15-Jan-18			13.3	15.3			12.2					

Source: DMOs, Bloomberg, Citi Research

This table is on a calendar-date basis

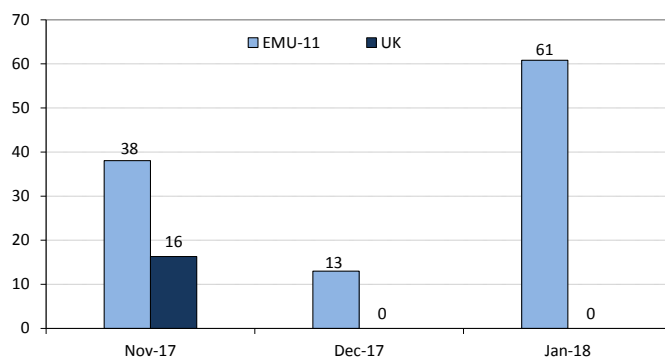
Figure 65. EMU-11/UK coupon payments over the next three months (Local currency, bn)

Coupons = €36bn												
Coupons	DEU 7	FRA 1	NLD 4	ITA 8	ESP 8	BEL 0	AUT 1	FIN 0	PRT 0	GRC 0	IRL 0	GBR 7
(Fri) 27-Oct-17				0.05								
(Tue) 31-Oct-17					7.1							
(Wed) 01-Nov-17				5.6								
(Thu) 02-Nov-17							0.04					
(Sun) 12-Nov-17				0.2								
(Wed) 15-Nov-17				0.3								
(Wed) 22-Nov-17							0.4					0.8
(Sat) 25-Nov-17		1.4										
(Thu) 30-Nov-17					0.4							
(Fri) 01-Dec-17				1.8								
(Thu) 07-Dec-17												2.5
(Fri) 15-Dec-17				0.3								
(Thu) 04-Jan-18	7.2											
(Mon) 15-Jan-18			3.8	0.1			0.6					
(Wed) 17-Jan-18												0.2
(Mon) 22-Jan-18												3.5

Source: DMOs, Bloomberg, Citi Research

This table is on a calendar-date basis

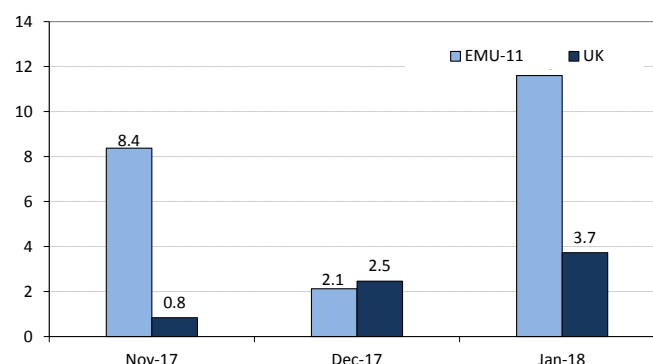
Figure 66. EMU-11/UK remaining redemptions (rolling 3m, LC, bn)



Source: DMOs, Bloomberg, Citi Research

This chart is on a calendar-date basis

Figure 67. EMU-11/UK remaining coupons (rolling 3m, LC, bn)



Source: DMOs, Bloomberg, Citi Research

This chart is on a calendar-date basis

Inflation Forecasts, Carry & Weekly Changes

Figure 68. Citi Inflation Forecasts

Month	EUR HICPxT			France CPIxT			UK RPI			US CPURNSA		
	Index	MoM	YoY	Index	MoM	YoY	Index	MoM	YoY	Index	MoM	YoY
	Forecast	Change	Change	Forecast	Change	Change	Forecast	Change	Change	Forecast	Change	Change
Sep 17	102.04	0.4	1.5	101.30	-0.2	0.9	275.10	0.1	3.9	246.82	0.5	2.2
Oct 17	102.24	0.2	1.4	101.54	0.2	1.2	276.16	0.4	4.3	246.63	-0.1	2.0
Nov 17	102.21	-0.0	1.5	101.45	-0.1	1.1	276.88	0.3	4.3	246.08	-0.2	2.0
Dec 17	102.51	0.3	1.2	101.67	0.2	1.0	278.04	0.4	4.1	245.68	-0.2	1.8
Jan 18	101.42	-1.1	1.0	101.14	-0.5	0.7	276.69	-0.5	4.2	246.13	0.2	1.4
Feb 18	101.76	0.3	1.0	101.28	0.1	0.8	278.29	0.6	3.7	247.29	0.5	1.5

Source: Citi Research, Bloomberg

Shaded = Already released

Figure 69. One week yield changes and inflation-linked carry (based on forecasts above)

Bond	RY (%)	Chg (bp)	Carry-adj chg	Carry: RY (bp)			Reference Conventional	BE (bp)	Chg (bp)	Carry-adj chg	Carry: BE (bp)			ZC Swap - BE Spread (bp)	Chg (bp)
				1 Dec	1 Jan	1 Feb					1 Dec	1 Jan	1 Feb		
Repo (%)				1.30	1.30	1.31									
TIPS 2.125% 1/19	-0.21	-7	-11	39	23	-13	T-1.500-01/31/19	170	7	11	38	19	-18	8	-3
TIPS 0.125% 4/19	-0.01	-5	-8	33	21	-6	T-1.625-04/30/19	153	5	8	31	17	-11	23	8
TIPS 1.875% 7/19	-0.36	-4	-6	26	14	-11	T-0.875-07/31/19	192	5	7	25	11	-16	25	7
TIPS 1.375% 1/20	-0.11	-2	-4	21	12	-5	T-1.375-01/31/20	175	5	7	20	9	-9	12	-4
TIPS 0.125% 4/20	0.02	-1	-2	19	12	-3	T-1.375-04/30/20	166	4	6	18	9	-8	14	-3
TIPS 1.25% 7/20	-0.17	-0	-2	17	10	-4	T-2.000-07/31/20	188	4	5	15	7	-9	23	3
TIPS 1.125% 1/21	0.01	0	-1	15	9	-2	T-2.125-01/31/21	179	4	5	13	6	-7	13	-4
TIPS 0.125% 4/21	0.13	0	-1	14	9	-1	T-1.375-04/30/21	171	3	4	12	6	-6	20	1
TIPS 0.625% 7/21	-0.02	1	-0	13	8	-2	T-2.250-07/31/21	190	4	5	11	5	-7	18	1
TIPS 0.125% 1/22	0.14	2	1	11	7	-1	T-1.500-01/31/22	182	4	5	10	4	-5	12	-3
TIPS 0.125% 4/22	0.22	2	1	11	7	0	T-1.875-03/31/22	178	5	5	9	4	-5	16	1
TIPS 0.125% 7/22	0.11	2	1	10	6	-1	T-1.625-08/15/22	191	5	6	9	3	-5	17	1
TIPS 0.125% 1/23	0.25	3	2	9	6	0	T-2.000-02/15/23	184	4	5	8	3	-4	13	-1
TIPS 0.375% 7/23	0.23	3	3	9	6	0	T-2.500-08/15/23	192	5	5	7	3	-4	17	2
TIPS 0.625% 1/24	0.36	5	4	8	6	1	T-2.750-02/15/24	184	3	4	7	3	-4	16	-0
TIPS 0.125% 7/24	0.35	5	5	7	5	0	T-2.375-08/15/24	191	4	4	6	2	-4	20	2
TIPS 2.375% 1/25	0.45	5	4	8	5	1	T-2.000-02/15/25	186	5	5	6	3	-3	17	-1
TIPS 0.25% 1/25	0.45	6	5	7	5	1	T-2.000-02/15/25	186	4	4	6	2	-3	18	-0
TIPS 2% 1/26	0.52	5	4	7	5	1	T-1.625-02/15/26	186	5	6	5	2	-3	21	-1
TIPS 0.625% 1/26	0.51	5	5	6	5	1	T-1.625-02/15/26	186	5	5	5	2	-3	21	-1
TIPS 0.125% 7/26	0.50	5	5	6	4	1	T-1.500-08/15/26	190	6	6	5	2	-3	26	1
TIPS 2.375% 1/27	0.57	5	4	6	5	1	T-6.625-02/15/27	178	5	5	5	2	-3	33	-0
TIPS 0.375% 1/27	0.57	5	5	6	4	1	T-2.250-02/15/27	186	6	6	4	2	-3	25	-2
TIPS 0.375% 7/27	0.54	6	5	5	4	1	T-2.375-05/15/27	189	5	6	4	1	-3	30	1
TIPS 1.75% 1/28	0.61	5	4	6	4	1	T-6.125-11/15/27	177	6	6	4	2	-3	37	-1
TIPS 3.625% 4/28	0.64	5	4	6	4	1	T-5.500-08/15/28	178	6	6	5	2	-2	35	-1
TIPS 2.5% 1/29	0.66	5	5	5	4	1	T-5.250-02/15/29	178	5	5	4	2	-2	38	-1
TIPS 3.875% 4/29	0.69	5	5	5	4	1	T-5.250-02/15/29	175	5	5	4	2	-2	42	1
TIPS 3.375% 4/32	0.71	5	5	4	3	1	T-5.375-02/15/31	178	6	6	3	1	-2	40	-2
TIPS 2.125% 2/40	0.90	6	6	3	2	1	T-4.625-02/15/40	192	6	6	2	1	-2	27	-1
TIPS 2.125% 2/41	0.91	6	6	3	2	1	T-4.750-02/15/41	193	6	6	2	0	-2	26	-1
TIPS 0.75% 2/42	0.95	6	6	2	2	1	T-3.125-02/15/42	194	6	6	2	0	-2	25	-1
TIPS 0.625% 2/43	0.96	7	6	2	2	1	T-3.125-02/15/43	195	6	6	1	0	-2	24	-1
TIPS 1.375% 2/44	0.98	6	6	2	2	1	T-3.625-02/15/44	193	6	6	2	0	-2	26	-1
TIPS 0.75% 2/45	0.98	6	6	2	2	1	T-2.500-02/15/45	196	6	6	1	0	-1	24	-1
TIPS 1% 2/46	0.98	6	6	2	2	1	T-2.500-02/15/46	197	6	6	1	0	-1	24	-1
TIPS 0.875% 2/47	0.98	7	6	2	2	1	T-3.000-02/15/47	197	6	6	1	0	-1	24	-1

Source: Citi Research, Bloomberg. As at 17:00 London time 26 October 2017.

Figure 70. EUR Inflation-linked Carry (based on forecasts above) – One week changes

Bond	RY (%)	Chg (bp)	Carry-adj chg	Carry: RY (bp)			Reference Conventional	BE (bp)	Chg (bp)	Carry-adj chg	Carry: BE (bp)			ZC Swap - BE Spread (bp)	Chg (bp)
				1 Dec	1 Jan	1 Feb					1 Dec	1 Jan	1 Feb		
Repo (%)				-0.37	-0.37	-0.37									
BUNDei20	-1.59	0	-1	14	19	14	DBR 1/20	85	-1	1	16	22	19	15	-1
BUNDei23	-1.33	0	-1	7	9	7	DBR 1/22	87	-0	1	7	9	8	34	2
BUNDei26	-1.06	0	-0	5	6	5	DBR 2/25	108	2	3	4	5	4	27	-0
BUNDei30	-0.65	3	2	4	5	5	DBR 1/30	123	1	2	3	3	2	31	1
BUNDei46	-0.34	3	3	2	2	2	DBR 8/46	157	2	2	1	1	0	31	-0
OATei20	-1.81	-2	-3	12	15	10	FRTR 4/20	125	-2	-1	13	17	12	23	-0
OATei21	-1.63	-1	-2	10	13	9	FRTR 4/21	120	-0	1	10	14	10	17	-2
OATei22	-1.49	0	-1	8	10	7	FRTR 4/21	105	-1	-1	8	10	8	36	1
OATei24	-1.15	-1	-1	6	8	6	FRTR 10/23	113	1	2	5	7	5	31	-1
OATei27	-0.74	-1	-1	5	6	6	FRTR 4/26	117	2	3	4	5	3	36	-2
OATei30	-0.48	-1	-1	4	5	5	FRTR 5/30	147	3	4	3	3	2	17	-2
OATei32	-0.44	-0	-1	4	5	5	FRTR 10/32	153	3	3	2	3	1	16	-2
OATei40	-0.17	-0	-1	2	3	3	FRTR 4/41	169	3	3	1	2	0	17	-2
OATei47	0.01	1	1	2	2	2	FRTR 5/45	170	2	2	1	1	0	24	-1
OATi19	-1.57	5	-1	-15	-7	-20	FRTR 4/19	90	-8	-3	-13	-2	-13	29	-2
OATi21	-1.37	4	2	-6	-2	-7	FRTR 4/21	93	-5	-3	-6	-1	-6	31	-1
OATi23	-1.16	4	2	-4	-1	-4	FRTR 10/23	114	-3	-1	-4	-2	-5	20	-0
OATi25	-0.87	3	2	-2	0	-2	FRTR 5/25	118	-1	-0	-3	-1	-4	18	-1
OATi28	-0.52	3	2	-1	1	0	FRTR 10/27	122	-1	0	-3	-1	-3	29	-1
OATi29	-0.57	2	1	-1	1	0	FRTR 4/29	139	-0	1	-3	-2	-4	21	-1
BTPei19	-1.33	-1	-3	20	28	23	BTPS 9/19	113	-0	2	20	26	20	21	-4
BTPei21	-0.72	-5	-7	11	16	15	BTPS 9/21	104	1	2	10	13	10	28	-2
BTPei22	-0.36	-4	-6	10	15	14	BTPS 4/22	93	0	1	8	11	8	36	1
BTPei23	-0.07	-6	-8	9	13	13	BTPS 8/23	100	1	1	7	9	6	36	-1
BTPei24	0.29	-7	-8	8	12	13	BTPS 9/24	103	1	2	6	7	5	35	-1
BTPei26	0.62	-8	-9	7	11	11	BTPS 3/26	103	3	3	4	6	4	42	-2
BTPei28	0.91	-9	-10	6	9	10	BTPS 9/28	117	2	3	3	4	2	34	-0
BTPei32	1.12	-5	-6	4	7	8	BTPS 3/32	124	2	2	2	3	2	43	-1
BTPei35	1.12	-5	-6	4	6	7	BTPS 8/34	146	1	1	2	2	0	29	1
BTPei41	1.53	-6	-6	3	5	6	BTPS 9/40	147	2	2	1	1	0	39	-0
SPGBEI19	-1.48	-6	-8	17	23	18	SPGB 10/19	120	0	2	17	23	17	16	-4
SPGBEI21	-1.06	-8	-9	10	13	11	SPGB 7/21	109	1	2	9	11	8	24	-2
SPGBEI24	-0.25	-10	-11	7	10	10	SPGB 10/24	113	2	2	5	7	5	27	-1
SPGBEI27	0.34	-11	-11	5	8	8	SPGB 4/27	110	2	2	3	4	3	41	-1
SPGBEI30	0.61	-10	-11	4	7	7	SPGB 7/30	126	0	1	3	3	2	35	1

Source: Citi Research. As at 17:00 London time 26 October 2017.

Figure 71. UK Gilts Inflation-linked Carry (based on forecasts above) – One week changes

Bond	RY (%)	Chg (bp)	Carry-adj chg	Carry: RY (bp)			Reference Conventional	BE (bp)	Chg (bp)	Carry-adj chg	Carry: BE (bp)			ZC Swap - BE Spread (bp)	Chg (bp)
				1 Dec	1 Jan	1 Feb					1 Dec	1 Jan	1 Feb		
Repo (%)				0.39	0.42	0.43									
UKTi Nov19	-2.66	16	11	-2	4	4	UKT 9/19	309	-9	-5	-2	4	4	28	6
UKTi Apr20	-2.37	7	7	1	1	2	UKT 3/20	285	-0	-0	0	1	1	31	-1
UKTi Nov22	-2.13	11	9	0	4	4	UKT 3/22	284	-1	1	-1	2	3	51	0
UKTi Mar24	-1.90	12	10	0	3	4	UKT 3/25	300	1	2	-1	1	1	24	-5
UKTi Jul24	-1.84	12	11	1	2	-21	UKT 3/25	294	1	1	0	0	-24	45	-0
UKTi Mar26	-1.70	12	11	1	3	4	UKT 9/25	287	-1	0	0	1	1	41	-1
UKTi Nov27	-1.66	13	12	1	3	4	UKT 12/27	305	-1	-0	-1	1	0	33	2
UKTi Mar29	-1.59	13	12	1	2	3	UKT 12/30	321	-1	-0	-1	0	0	13	-1
UKTi Jul30	-1.58	12	12	1	2	-11	UKT 12/30	319	0	0	0	-1	-15	26	1
UKTi Nov32	-1.57	12	11	0	2	3	UKT 6/32	329	-0	1	-1	0	0	20	1
UKTi Mar34	-1.53	12	11	0	2	2	UKT 9/34	335	0	1	-1	0	-1	11	-1
UKTi Jan35	-1.52	9	9	1	1	-8	UKT 3/36	338	2	2	0	-1	-11	12	-1
UKTi Nov36	-1.51	12	11	0	2	2	UKT 3/36	337	-0	-0	-1	0	-1	16	2
UKTi Nov37	-1.51	12	11	0	2	2	UKT 12/38	343	-2	-1	-1	0	-1	12	3
UKTi Mar40	-1.50	11	11	0	1	2	UKT 12/40	346	-1	-1	-1	0	-1	6	1
UKTi Nov42	-1.50	11	10	0	1	2	UKT 12/42	346	-0	-0	-1	0	-1	10	2
UKTi Mar44	-1.45	11	10	0	1	1	UKT 1/44	344	-0	-0	-1	0	-1	7	1
UKTi Mar46	-1.44	11	10	0	1	1	UKT 1/45	342	-0	0	-1	0	-1	7	0
UKTi Nov47	-1.44	11	11	0	1	1	UKT 12/46	340	-1	-1	-1	0	-1	10	2
UKTi Mar50	-1.45	10	10	0	1	1	UKT 12/49	335	-0	-0	0	0	-1	10	0
UKTi Mar52	-1.46	10	9	0	1	1	UKT 7/52	331	0	0	0	0	-1	11	-0
UKTi Nov55	-1.46	9	9	0	1	1	UKT 12/55	327	1	1	0	0	0	13	0
UKTi Nov56	-1.45	10	10	0	1	1	UKT 12/55	326	-0	0	0	0	-1	13	1
UKTi Mar58	-1.47	10	10	0	1	1	UKT 1/60	324	-0	-0	0	0	0	12	1
UKTi Mar62	-1.49	9	9	0	1	1	UKT 1/60	327	0	1	0	0	-1	8	-0
UKTi Nov65	-1.51	9	9	0	1	1	UKT 7/65	325	1	1	0	0	0	11	0
UKTi Mar68	-1.53	9	9	0	1	1	UKT 7/68	327	1	1	0	0	0	7	-0

Source: Citi Research. As at 17:00 London time 26 October 2017.

Summary of Recent Publications

Date	Publication	Topic	Page	Region
19-Oct-17	European Weekly	How to position into the ECB	2	EUR
		EGB spreads – tapering calibration crucial, but mind the politics too	7	EUR
		Bono spreads and Catalonia – turbulence, but no break-out	11	EUR
		UK – November nerves	12	UK
		Euro inflation – new 6yr BTP Italia in November	14	EUR
		Riding the EFSF rallies	16	EUR
		EUR: Trading exit sequencing via spread options	19	EUR
19-Oct-17	NOTE	Weekly Supply Monitor - Euro, US and UK Supply Outlook	-	Global
19-Oct-17	NOTE	European Inflation-linked Index Projections - changes most supportive for France	-	EUR
19-Oct-17	NOTE	EMU Month-End Index Projections - changes most supportive for France	-	EUR
12-Oct-17	European Weekly	ECB QE scenarios – how will rates react?	2	EUR
		Is the Austrian election being overlooked?	8	EUR
		UK - Carney testifies	10	UK
		Euro inflation – HICPxT swaps look rich	12	EUR
		EUR - Forward curve & rolldown of receiver swaptions at the front-end	14	EUR
		SSA spreads remain firm amid a pick-up in issuance	16	EUR
		Covered bond redemptions	17	EUR
12-Oct-17	NOTE	Weekly Supply Monitor - Euro, US and UK Supply Outlook	-	Global
11-Oct-17	NOTE	Covered Bond Redemptions 2018	-	EUR
10-Oct-17	NOTE	European SSA & Covered Bond Monthly - Trading QE taper	-	EUR
5-Oct-17	European Weekly	Looking at lower but longer on APP	2	EUR
		Bono spreads – turbulence, but no break-out	11	EUR
		Euro inflation – cheapness of Bundel break-evens	15	EUR
		German election & sub-sovereign debt	17	EUR
		EBA and the LCR conundrum	20	EUR
5-Oct-17	NOTE	Weekly Supply Monitor - Euro, US and UK Supply Outlook	-	Global
5-Oct-17	NOTE	Coalition talks: Risks for German Laender bonds?	-	EUR
3-Oct-17	NOTE	ECB QE Tracker Sept 2017 – back up to €62.6bn	-	EUR
2-Oct-17	NOTE	EGB Supply Monthly - Net cash requirement in October very supportive for EGBs	-	EUR
2-Oct-17	NOTE	Trading the pause in the rise of UK rates via swaption triangles	-	UK
28-Sep-17	NOTE	Global Inflation Strategy Monthly - Breakevens on the rise	-	Global

Appendix A-1

Analyst Certification

The research analysts primarily responsible for the preparation and content of this research report are either (i) designated by "AC" in the author block or (ii) listed in bold alongside content which is attributable to that analyst. If multiple AC analysts are designated in the author block, each analyst is certifying with respect to the entire research report other than (a) content attributable to another AC certifying analyst listed in bold alongside the content and (b) views expressed solely with respect to a specific issuer which are attributable to another AC certifying analyst identified in the price charts or rating history tables for that issuer shown below. Each of these analysts certify, with respect to the sections of the report for which they are responsible: (1) that the views expressed therein accurately reflect their personal views about each issuer and security referenced and were prepared in an independent manner, including with respect to Citigroup Global Markets Inc. and its affiliates; and (2) no part of the research analyst's compensation was, is, or will be, directly or indirectly, related to the specific recommendations or views expressed by that research analyst in this report.

IMPORTANT DISCLOSURES

Citigroup Global Markets Inc. owns a position of 1 million USD or more in the debt securities of Germany

Citigroup Global Markets Inc. owns a position of 1 million USD or more in the debt securities of KFW

Citigroup Global Markets Inc. owns a position of 1 million USD or more in the debt securities of NORDRHEIN-WESTFALEN, LAND OF

Citigroup Global Markets Inc. owns a position of 1 million USD or more in the debt securities of United Kingdom

Citigroup Global Markets Inc. owns a position of 1 million USD or more in the debt securities of United States

Within the past 12 months, Citigroup Global Markets Inc. or its affiliates has acted as manager or co-manager of an offering of securities of Belgium, France, BANK NEDERLANDSE GEMEENTEN NV, Germany, ONTARIO, PROVINCE OF, KFW, BNP Paribas Fortis SA, NORDRHEIN-WESTFALEN, LAND OF, CAISSE AMORTISSEMENT DE LA DETTE SOCIALE, EUROPEAN UNION, Spain, Netherlands, Italy, EUROPEAN INVESTMENT BANK, Finland, United States, Sweden.

Citigroup Global Markets Inc. or its affiliates has received compensation for investment banking services provided within the past 12 months from Belgium, France, BANK NEDERLANDSE GEMEENTEN NV, Germany, ONTARIO, PROVINCE OF, KFW, BNP Paribas Fortis SA, NORDRHEIN-WESTFALEN, LAND OF, CAISSE AMORTISSEMENT DE LA DETTE SOCIALE, EUROPEAN UNION, Spain, Netherlands, Italy, EUROPEAN INVESTMENT BANK, Finland, Austria, United Kingdom, United States, Sweden.

Citigroup Global Markets Inc. or its affiliates expects to receive or intends to seek, within the next three months, compensation for investment banking services from France, Germany, KFW, NORDRHEIN-WESTFALEN, LAND OF, CAISSE AMORTISSEMENT DE LA DETTE SOCIALE, Italy, EUROPEAN INVESTMENT BANK, Austria, United Kingdom, Sweden.

Citigroup Global Markets Inc. or an affiliate received compensation for products and services other than investment banking services from Belgium, France, BANK NEDERLANDSE GEMEENTEN NV, Germany, ONTARIO, PROVINCE OF, KFW, BNP Paribas Fortis SA, NORDRHEIN-WESTFALEN, LAND OF, CAISSE AMORTISSEMENT DE LA DETTE SOCIALE, EUROPEAN UNION, Spain, Netherlands, Italy, EUROPEAN INVESTMENT BANK, Finland, Austria, United Kingdom, United States, Sweden in the past 12 months.

Citigroup Global Markets Inc. currently has, or had within the past 12 months, the following as investment banking client(s): Belgium, France, BANK NEDERLANDSE GEMEENTEN NV, Germany, ONTARIO, PROVINCE OF, KFW, BNP Paribas Fortis SA, NORDRHEIN-WESTFALEN, LAND OF, CAISSE AMORTISSEMENT DE LA DETTE SOCIALE, EUROPEAN UNION, Spain, Netherlands, Italy, EUROPEAN INVESTMENT BANK, Finland, Austria, United Kingdom, United States, Sweden.

Citigroup Global Markets Inc. currently has, or had within the past 12 months, the following as clients, and the services provided were non-investment-banking, securities-related: Belgium, France, BANK NEDERLANDSE GEMEENTEN NV, Germany, ONTARIO, PROVINCE OF, KFW, BNP Paribas Fortis SA, NORDRHEIN-WESTFALEN, LAND OF, CAISSE AMORTISSEMENT DE LA DETTE SOCIALE, EUROPEAN UNION, Spain, Netherlands, Italy, EUROPEAN INVESTMENT BANK, Finland, Austria, United Kingdom, United States, Sweden.

Citigroup Global Markets Inc. currently has, or had within the past 12 months, the following as clients, and the services provided were non-investment-banking, non-securities-related: Belgium, France, BANK NEDERLANDSE GEMEENTEN NV, Germany, KFW, BNP Paribas Fortis SA, NORDRHEIN-WESTFALEN, LAND OF, CAISSE AMORTISSEMENT DE LA DETTE SOCIALE, EUROPEAN UNION, Spain, Netherlands, Italy, EUROPEAN INVESTMENT BANK, Finland, Austria, United Kingdom, United States, Sweden.

United States or its affiliates beneficially owns 5.0% or more of any class of common equity securities of Citigroup Inc.

Citigroup Global Markets Inc. and/or its affiliates has a significant financial interest in relation to BANK NEDERLANDSE GEMEENTEN NV, Germany, ONTARIO, PROVINCE OF, Spain, EUROPEAN INVESTMENT BANK, Finland, Austria, United Kingdom, United States. (For an explanation of the determination of significant financial interest, please refer to the policy for managing conflicts of interest which can be found at www.citiVelocity.com.)

Disclosure for investors in the Republic of Turkey: Under Capital Markets Law of Turkey (Law No: 6362), the investment information, comments and advices given herein are not part of investment advisory activity. Investment advisory services are provided by authorized institutions to persons and entities privately by considering their risk and return preferences. Whereas the comments and advices included herein are of general nature. Therefore, they may not fit to your financial situation and risk and return preferences. For this reason, making an investment decision only by relying on the information given herein may not give rise to results that fit your expectations. Furthermore, Citi Research is a division of Citigroup Global Markets Inc. (the "Firm"), which does and seeks to do business with companies and/or trades on securities covered in this research reports. As a result, investors should be aware that the Firm may have a conflict of interest that could affect the objectivity of this report.

Analysts' compensation is determined by Citi Research management and Citigroup's senior management and is based upon activities and services intended to benefit the investor clients of Citigroup Global Markets Inc. and its affiliates (the "Firm"). Compensation is not linked to specific transactions or recommendations. Like all Firm employees, analysts receive compensation that is impacted by overall Firm profitability which includes investment banking, sales and trading, and principal trading revenues. One factor in equity research analyst compensation is arranging corporate access events between institutional clients and the management teams of covered companies. Typically, company management is more likely to participate when the analyst has a positive view of the company.

For securities recommended in the Product in which the Firm is not a market maker, the Firm is a liquidity provider in the issuers' financial instruments and may act as principal in connection with such transactions. The Firm is a regular issuer of traded financial instruments linked to securities that may have been recommended in the Product. The Firm regularly trades in the securities of the issuer(s) discussed in the Product. The Firm may engage in securities transactions in a manner inconsistent with the Product and, with respect to securities covered by the Product, will buy or sell from customers on a principal basis.

For important disclosures (including copies of historical disclosures) regarding the companies that are the subject of this Citi Research product ("the Product"), please contact Citi Research, 388 Greenwich Street, 28th Floor, New York, NY, 10013, Attention: Legal/Compliance [E6WYB6412478]. In addition, the same important disclosures, with the exception of the Valuation and Risk assessments and historical disclosures, are contained on the Firm's disclosure website at https://www.citivelocity.com/cvr/eppublic/citi_research_disclosures. Valuation and Risk assessments can be found in the text of the most recent research note/report regarding the subject company. Pursuant to the Market Abuse Regulation a history of all Citi Research recommendations published during the preceding 12-month period can be accessed via Citi Velocity (<https://www.citivelocity.com/cv2>) or your standard distribution portal. Historical disclosures (for up to the past three years) will be provided upon request.

NON-US RESEARCH ANALYST DISCLOSURES

Non-US research analysts who have prepared this report (i.e., all research analysts listed below other than those identified as employed by Citigroup Global Markets Inc.) are not registered/qualified as research analysts with FINRA. Such research analysts may not be associated persons of the member organization and therefore may not be subject to the FINRA Rule 2241 restrictions on communications with a subject company, public appearances and trading securities held by a research analyst account. The legal entities employing the authors of this report are listed below:

Citigroup Global Markets Ltd	Harvinder Sian; Jamie Searle; Matteo Regesta; Peter Goves; Aman Bansal, CFA; Andrea Appeddu
Citigroup Global Markets Deutschland AG	Michael Spies
Citigroup Global Markets India Private Limited	Puja V Sawant; Saumesh Dutta

OTHER DISCLOSURES

Any price(s) of instruments mentioned in recommendations are as of the prior day's market close on the primary market for the instrument, unless otherwise stated.

The completion and first dissemination of any recommendations made within this research report are as of the Eastern date-time displayed at the top of the Product. If the Product references views of other analysts then please refer to the price chart or rating history table for the date/time of completion and first dissemination with respect to that view.

European regulations require that where a recommendation differs from any of the author's previous recommendations concerning the same financial instrument or issuer that has been published during the preceding 12-month period that the change(s) and the date of that previous recommendation are indicated. Please refer to the trade history in the published research or contact the research analyst.

European regulations require that a firm must establish, implement and make available a policy for managing conflicts of interest arising as a result of publication or distribution of investment research. The policy applicable to Citi Research's Products can be found at https://www.citivelocity.com/cvr/eppublic/citi_research_disclosures.

The proportion of all Citi Research fundamental research recommendations that were the equivalent to "Buy", "Hold", "Sell" at the end of each quarter over the prior 12 months (with the % of these that had received investment firm services from Citi in the prior 12 months shown in brackets) is as follows: Q3 2017 Buy 32% (70%), Hold 44% (64%), Sell 24% (58%); Q2 2017 Buy 32% (70%), Hold 45% (63%), Sell 24% (57%); Q1 2017 Buy 32% (70%), Hold 45% (63%), Sell 24% (56%); Q4 2016 Buy 31% (71%), Hold 45% (64%), Sell 24% (58%).

Citigroup Global Markets India Private Limited and/or its affiliates may have, from time to time, actual or beneficial ownership of 1% or more in the debt securities of the subject issuer.

Citi Research generally disseminates its research to the Firm's global institutional and retail clients via both proprietary (e.g., Citi Velocity and Citi Personal Wealth Management) and non-proprietary electronic distribution platforms. Certain research may be disseminated only via the Firm's proprietary distribution platforms; however such research will not contain changes to earnings forecasts, target price, investment or risk rating or investment thesis or be otherwise inconsistent with the author's previously published research. Certain research is made available only to institutional investors to satisfy regulatory requirements. Individual Citi Research analysts may also opt to circulate published research to one or more clients by email; such email distribution is discretionary and is done only after the research has been disseminated. The level and types of services provided by Citi Research analysts to clients may vary depending on various factors such as the client's individual preferences as to the frequency and manner of receiving communications from analysts, the client's risk profile and investment focus and perspective (e.g. market-wide, sector specific, long term, short-term etc.), the size and scope of the overall client relationship with the Firm and legal and regulatory constraints.

Pursuant to Comissão de Valores Mobiliários Rule 483, Citi is required to disclose whether a Citi related company or business has a commercial relationship with the subject company. Considering that Citi operates multiple businesses in more than 100 countries around the world, it is likely that Citi has a commercial relationship with the subject company.

Securities recommended, offered, or sold by the Firm: (i) are not insured by the Federal Deposit Insurance Corporation; (ii) are not deposits or other obligations of any insured depository institution (including Citibank); and (iii) are subject to investment risks, including the possible loss of the principal amount invested. The Product is for informational purposes only and is not intended as an offer or solicitation for the purchase or sale of a security. Any decision to purchase securities mentioned in the Product must take into account existing public information on such security or any registered prospectus. Although information has been obtained from and is based upon sources that the Firm believes to be reliable, we do not guarantee its accuracy and it may be incomplete and condensed. Note, however, that the Firm has taken all reasonable steps to determine the accuracy and completeness of the disclosures made in the Important Disclosures section of the Product. The Firm's research department has received assistance from the subject company(ies) referred to in this Product including, but not limited to, discussions with management of the subject company(ies). Firm policy prohibits research analysts from sending draft research to subject companies. However, it should be presumed that the author of the Product has had discussions with the subject company to ensure factual accuracy prior to publication. All opinions, projections and estimates constitute the judgment of the author as of the date of the Product and these, plus any other information contained in the Product, are subject to change without notice. Prices and availability of financial instruments also are subject to change without notice. Notwithstanding other departments within the Firm advising the companies discussed in this Product, information obtained in such role is not used in the preparation of the Product. Although Citi Research does not set a predetermined frequency for publication, if the Product is a fundamental equity or credit research report, it is the intention of Citi Research to provide research coverage of the covered issuers, including in response to news affecting the issuer. For non-fundamental research reports, Citi Research may not provide regular updates to the views, recommendations and facts included in the reports. Notwithstanding that Citi Research maintains coverage on, makes recommendations concerning or discusses issuers, Citi Research may be periodically restricted from referencing certain issuers due to legal or policy reasons. Citi Research may provide different research products and services to different classes of customers (for example, based upon long-term or short-term investment horizons) that may lead to differing conclusions or recommendations that could impact the price of a security contrary to the recommendations in the alternative research product, provided that each is consistent with the rating system for each respective product.

Investing in non-U.S. securities, including ADRs, may entail certain risks. The securities of non-U.S. issuers may not be registered with, nor be subject to the reporting requirements of the U.S. Securities and Exchange Commission. There may be limited information available on foreign securities. Foreign companies are generally not subject to uniform audit and reporting standards, practices and requirements comparable to those in the U.S. Securities of some foreign companies may be less liquid and their prices more volatile than securities of comparable U.S. companies. In addition, exchange rate movements may have an adverse effect on the value of an investment in a foreign stock and its corresponding dividend payment for U.S. investors. Net dividends to ADR investors are estimated, using withholding tax rates conventions, deemed accurate, but investors are urged to consult their tax advisor for exact dividend computations. Investors who have received the Product from the Firm may be prohibited in certain states or other jurisdictions from purchasing securities mentioned in the Product from the Firm. Please ask your Financial Consultant for additional details. Citigroup Global Markets Inc. takes responsibility for the Product in the United States. Any orders by US investors resulting from the information contained in the Product may be placed only through Citigroup Global Markets Inc.

Important Disclosures for Bell Potter Customers: Bell Potter is making this Product available to its clients pursuant to an agreement with Citigroup Global Markets Australia Pty Limited. Neither Citigroup Global Markets Australia Pty Limited nor any of its affiliates has made any determination as to the suitability of the information provided herein and clients should consult with their Bell Potter financial advisor before making any investment decision.

The Citigroup legal entity that takes responsibility for the production of the Product is the legal entity which the first named author is employed by. The Product is made available in **Australia** through Citigroup Global Markets Australia Pty Limited. (ABN 64 003 114 832 and AFSL No. 240992), participant of the ASX Group and regulated by the Australian Securities & Investments Commission. Citigroup Centre, 2 Park Street, Sydney, NSW 2000. Citigroup Global Markets Australia Pty Limited is not an Authorised Deposit-Taking Institution under the Banking Act 1959, nor is it regulated by the Australian Prudential Regulation Authority. The Product is made available in Australia to Private Banking wholesale clients through Citigroup Pty Limited (ABN 88 004 325 080 and AFSL 238098). Citigroup Pty Limited provides all financial product advice to Australian Private Banking wholesale clients through bankers and relationship managers. If there is any doubt about the suitability of investments held in Citigroup Private Bank accounts, investors should contact the Citigroup Private Bank in Australia. Citigroup companies may compensate affiliates and their representatives for providing products and services to clients. The Product is made available in **Brazil** by Citigroup Global Markets Brasil - CCTVM SA, which is regulated by CVM - Comissão de Valores Mobiliários ("CVM"), BACEN - Brazilian Central Bank, APIMEC - Associação dos Analistas e Profissionais de Investimento do Mercado de Capitais and ANBIMA - Associação Brasileira das Entidades dos Mercados Financeiro e de Capitais. Av. Paulista, 1111 - 14º andar(parte) - CEP: 01311920 - São Paulo - SP. If the Product is being made available in certain provinces of **Canada** by Citigroup Global Markets (Canada) Inc. ("CGM Canada"), CGM Canada has approved the Product. Citigroup Place, 123 Front Street West, Suite 1100, Toronto, Ontario M5J 2M3. This product is available in **Chile** through Banchile Corredores de Bolsa S.A., an indirect subsidiary of Citigroup Inc., which is regulated by the Superintendencia de Valores y Seguros. Agustinas 975, piso 2, Santiago, Chile. The Product is distributed in **Germany** by Citigroup Global Markets Deutschland AG ("CGMD"), which is regulated by Bundesanstalt fuer Finanzdienstleistungsaufsicht (BaFin). CGMD, Reuterweg 16, 60323 Frankfurt am Main. Research which relates to "securities" (as defined in the Securities and Futures Ordinance (Cap. 571 of the Laws of Hong Kong)) is issued in **Hong Kong** by, or on behalf of, Citigroup Global Markets Asia Limited which takes full responsibility for its content. Citigroup Global Markets Asia Ltd. is regulated by Hong Kong Securities and Futures Commission. If the Research is made available through Citibank, N.A., Hong Kong Branch, for its clients in Citi Private Bank, it is made available by Citibank N.A., Citibank Tower, Citibank Plaza, 3 Garden Road, Hong Kong. Citibank N.A. is regulated by the Hong Kong Monetary Authority. Please contact your Private Banker in Citibank N.A., Hong Kong, Branch if you have any queries on or any matters arising from or in connection with this document. The Product is made available in **India** by Citigroup Global Markets India Private Limited (CGM), which is regulated by the Securities and Exchange Board of India (SEBI), as a Research Analyst (SEBI Registration No. INH000000438). CGM is also actively involved in the business of merchant banking and stock brokerage in India, and is registered with SEBI in this regard. CGM's registered office is at 1202, 12th Floor, FIFC, G Block, Bandra Kurla Complex, Bandra East, Mumbai - 400098. CGM's Corporate Identity Number is U99999MH2000PTC126657, and its contact details are: Tel:+9102261759999 Fax:+9102261759961. The Product is made available in **Indonesia** through PT Citigroup Securities Indonesia. 5/F, Citibank Tower, Bapindo Plaza, Jl. Jend. Sudirman Kav. 54-55, Jakarta 12190. Neither this Product nor any copy hereof may be distributed in Indonesia or to any Indonesian citizens wherever they are domiciled or to Indonesian residents except in compliance with applicable capital market laws and regulations. This Product is not an offer of securities in Indonesia. The securities referred to in this Product have not been registered with the Capital Market and Financial Institutions Supervisory Agency (BAPEPAM-LK) pursuant to relevant capital market laws and regulations, and may not be offered or sold within the territory of the Republic of Indonesia or to Indonesian citizens through

a public offering or in circumstances which constitute an offer within the meaning of the Indonesian capital market laws and regulations. The Product is made available in **Israel** through Citibank NA, regulated by the Bank of Israel and the Israeli Securities Authority. Citibank, N.A, Platinum Building, 21 Ha'arba'ah St, Tel Aviv, Israel. The Product is made available in **Italy** by Citigroup Global Markets Limited, which is authorised by the PRA and regulated by the FCA and the PRA. Via dei Mercanti, 12, Milan, 20121, Italy. The Product is made available in **Japan** by Citigroup Global Markets Japan Inc. ("CGMJ"), which is regulated by Financial Services Agency, Securities and Exchange Surveillance Commission, Japan Securities Dealers Association, Tokyo Stock Exchange and Osaka Securities Exchange. Otemachi Park Building, 1-1-1 Otemachi, Chiyoda-ku, Tokyo 100-8132 Japan. If the Product was distributed by SMBC Nikko Securities Inc. it is being so distributed under license. In the event that an error is found in an CGMJ research report, a revised version will be posted on the Firm's Citi Velocity website. If you have questions regarding Citi Velocity, please call (81 3) 6270-3019 for help. The Product is made available in **Korea** by Citigroup Global Markets Korea Securities Ltd., which is regulated by the Financial Services Commission, the Financial Supervisory Service and the Korea Financial Investment Association (KOFIA). Citibank Building, 39 Da-dong, Jung-gu, Seoul 100-180, Korea. KOFIA makes available registration information of research analysts on its website. Please visit the following website if you wish to find KOFIA registration information on research analysts of Citigroup Global Markets Korea Securities

Ltd. <http://dis.kofia.or.kr/websquare/index.jsp?w2xPath=/wq/fundMgr/DISFundMgrAnalystList.xml&divisionId=MDIS03002002000000&serviceId=SDIS03002002000>. The Product is made available in Korea by Citibank Korea Inc., which is regulated by the Financial Services Commission and the Financial Supervisory Service. Address is Citibank Building, 39 Da-dong, Jung-gu, Seoul 100-180, Korea. This research report is intended to be provided only to Professional Investors as defined in the Financial Investment Services and Capital Market Act and its Enforcement Decree in Korea. The Product is made available in **Malaysia** by Citigroup Global Markets Malaysia Sdn Bhd (Company No. 460819-D) ("CGMM") to its clients and CGMM takes responsibility for its contents. CGMM is regulated by the Securities Commission of Malaysia. Please contact CGMM at Level 43 Menara Citibank, 165 Jalan Ampang, 50450 Kuala Lumpur, Malaysia in respect of any matters arising from, or in connection with, the Product. The Product is made available in **Mexico** by Acciones y Valores Banamex, S.A. de C. V., Casa de Bolsa, Integrante del Grupo Financiero Banamex ("Accival") which is a wholly owned subsidiary of Citigroup Inc. and is regulated by Comision Nacional Bancaria y de Valores. Reforma 398, Col. Juarez, 06600 Mexico, D.F. In **New Zealand** the Product is made available to 'wholesale clients' only as defined by s5C(1) of the Financial Advisers Act 2008 ("FAA") through Citigroup Global Markets Australia Pty Ltd (ABN 64 003 114 832 and AFSL No. 240992), an overseas financial adviser as defined by the FAA, participant of the ASX Group and regulated by the Australian Securities & Investments Commission. Citigroup Centre, 2 Park Street, Sydney, NSW 2000. The Product is made available in **Pakistan** by Citibank N.A. Pakistan branch, which is regulated by the State Bank of Pakistan and Securities Exchange Commission, Pakistan. AWT Plaza, 1.1. Chundrigar Road, P.O. Box 4889, Karachi-74200. The Product is made available in the **Philippines** through Citicorp Financial Services and Insurance Brokerage Philippines, Inc., which is regulated by the Philippines Securities and Exchange Commission. 20th Floor Citibank Square Bldg. The Product is made available in the Philippines through Citibank NA Philippines branch, Citibank Tower, 8741 Paseo De Roxas, Makati City, Manila. Citibank NA Philippines NA is regulated by The Bangko Sentral ng Pilipinas. The Product is made available in **Poland** by Dom Maklerski Banku Handlowego SA an indirect subsidiary of Citigroup Inc., which is regulated by Komisja Nadzoru Finansowego. Dom Maklerski Banku Handlowego S.A. ul.Senatorska 16, 00-923 Warszawa. The Product is made available in the **Russian Federation** through AO Citibank, which is licensed to carry out banking activities in the Russian Federation in accordance with the general banking license issued by the Central Bank of the Russian Federation and brokerage activities in accordance with the license issued by the Federal Service for Financial Markets. Neither the Product nor any information contained in the Product shall be considered as advertising the securities mentioned in this report within the territory of the Russian Federation or outside the Russian Federation. The Product does not constitute an appraisal within the meaning of the Federal Law of the Russian Federation of 29 July 1998 No. 135-FZ (as amended) On Appraisal Activities in the Russian Federation. 8-10 Gasheka Street, 125047 Moscow. The Product is made available in **Singapore** through Citigroup Global Markets Singapore Pte. Ltd. ("CGMSPL"), a capital markets services license holder, and regulated by Monetary Authority of Singapore. Please contact CGMSPL at 8 Marina View, 21st Floor Asia Square Tower 1, Singapore 018960, in respect of any matters arising from, or in connection with, the analysis of this document. This report is intended for recipients who are accredited, expert and institutional investors as defined under the Securities and Futures Act (Cap. 289). The Product is made available by The Citigroup Private Bank in Singapore through Citibank, N.A., Singapore Branch, a licensed bank in Singapore that is regulated by Monetary Authority of Singapore. Please contact your Private Banker in Citibank N.A., Singapore Branch if you have any queries on or any matters arising from or in connection with this document. This report is intended for recipients who are accredited, expert and institutional investors as defined under the Securities and Futures Act (Cap. 289). This report is distributed in Singapore by Citibank Singapore Ltd ("CSL") to selected Citigold/Citigold Private Clients. CSL provides no independent research or analysis of the substance or in preparation of this report. Please contact your Citigold/Citigold Private Client Relationship Manager in CSL if you have any queries on or any matters arising from or in connection with this report. This report is intended for recipients who are accredited investors as defined under the Securities and Futures Act (Cap. 289). Citigroup Global Markets (Pty) Ltd. is incorporated in the **Republic of South Africa** (company registration number 2000/025866/07) and its registered office is at 145 West Street, Sandton, 2196, Saxonwold. Citigroup Global Markets (Pty) Ltd. is regulated by JSE Securities Exchange South Africa, South African Reserve Bank and the Financial Services Board. The investments and services contained herein are not available to private customers in South Africa. The Product is made available in the **Republic of China** through Citigroup Global Markets Taiwan Securities Company Ltd. ("CGMTS"), 14 and 15F, No. 1, Songzhi Road, Taipei 110, Taiwan, subject to the license scope and the applicable laws and regulations in the Republic of China. CGMTS is regulated by the Securities and Futures Bureau of the Financial Supervisory Commission of Taiwan, the Republic of China. No portion of the Product may be reproduced or quoted in the Republic of China by the press or any third parties [without the written authorization of CGMTS]. Pursuant to the applicable laws and regulations in the Republic of China, the recipient of the Product shall not take advantage of such Product to involve in any matters in which the recipient may have conflicts of interest. If the Product covers securities which are not allowed to be offered or traded in the Republic of China, neither the Product nor any information contained in the Product shall be considered as advertising the securities or making recommendation of the securities in the Republic of China. The Product is for informational purposes only and is not intended as an offer or solicitation for the purchase or sale of a security or financial products. Any decision to purchase securities or financial products mentioned in the Product must take into account existing public information on such security or the financial products or any registered prospectus. The Product is made available in **Thailand** through Citicorp Securities (Thailand) Ltd., which is regulated by the Securities and Exchange Commission of Thailand. 399 Interchange 21 Building, 18th Floor, Sukhumvit Road, Klongtoey Nua, Wattana, Bangkok 10110, Thailand. The Product is made available in **Turkey** through Citibank AS which is regulated by Capital Markets Board. Tekfen Tower, Eski Buyukdere Caddesi # 209 Kat 2B, 23294 Levent, Istanbul, Turkey. In the **U.A.E**, these materials (the "Materials") are communicated by Citigroup Global Markets Limited, DIFC branch ("CGML"), an entity registered in the Dubai International Financial Center ("DIFC") and licensed and regulated by the Dubai Financial Services Authority ("DFSA") to Professional Clients and Market Counterparties only and should not be relied upon or distributed to Retail Clients. A distribution of the different Citi Research ratings distribution, in

percentage terms for Investments in each sector covered is made available on request. Financial products and/or services to which the Materials relate will only be made available to Professional Clients and Market Counterparties. The Product is made available in **United Kingdom** by Citigroup Global Markets Limited, which is authorised by the Prudential Regulation Authority ("PRA") and regulated by the Financial Conduct Authority ("FCA") and the PRA. This material may relate to investments or services of a person outside of the UK or to other matters which are not authorised by the PRA nor regulated by the FCA and the PRA and further details as to where this may be the case are available upon request in respect of this material. Citigroup Centre, Canada Square, Canary Wharf, London, E14 5LB. The Product is made available in **United States** by Citigroup Global Markets Inc, which is a member of FINRA and registered with the US Securities and Exchange Commission. 388 Greenwich Street, New York, NY 10013. Unless specified to the contrary, within EU Member States, the Product is made available by Citigroup Global Markets Limited, which is authorised by the PRA and regulated by the FCA and the PRA. The Product is not to be construed as providing investment services in any jurisdiction where the provision of such services would not be permitted. Subject to the nature and contents of the Product, the investments described therein are subject to fluctuations in price and/or value and investors may get back less than originally invested. Certain high-volatility investments can be subject to sudden and large falls in value that could equal or exceed the amount invested. Certain investments contained in the Product may have tax implications for private customers whereby levels and basis of taxation may be subject to change. If in doubt, investors should seek advice from a tax adviser. The Product does not purport to identify the nature of the specific market or other risks associated with a particular transaction. Advice in the Product is general and should not be construed as personal advice given it has been prepared without taking account of the objectives, financial situation or needs of any particular investor. Accordingly, investors should, before acting on the advice, consider the appropriateness of the advice, having regard to their objectives, financial situation and needs. Prior to acquiring any financial product, it is the client's responsibility to obtain the relevant offer document for the product and consider it before making a decision as to whether to purchase the product. Citi Research product may source data from dataCentral. dataCentral is a Citi Research proprietary database, which includes the Firm's estimates, data from company reports and feeds from Thomson Reuters. The printed and printable version of the research report may not include all the information (e.g., certain financial summary information and comparable company data) that is linked to the online version available on the Firm's proprietary electronic distribution platforms.

© 2017 Citigroup Global Markets Inc. Citi Research is a division of Citigroup Global Markets Inc. Citi and Citi with Arc Design are trademarks and service marks of Citigroup Inc. and its affiliates and are used and registered throughout the world. All rights reserved. The research data in this report is not intended to be used for the purpose of (a) determining the price or amounts due in respect of one or more financial products or instruments and/or (b) measuring or comparing the performance of a financial product or a portfolio of financial instruments, and any such use is strictly prohibited without the prior written consent of Citi Research. Any unauthorized use, duplication, redistribution or disclosure of this report (the "Product"), including, but not limited to, redistribution of the Product by electronic mail, posting of the Product on a website or page, and/or providing to a third party a link to the Product, is prohibited by law and will result in prosecution. The information contained in the Product is intended solely for the recipient and may not be further distributed by the recipient to any third party. Where included in this report, MSCI sourced information is the exclusive property of Morgan Stanley Capital International Inc. (MSCI). Without prior written permission of MSCI, this information and any other MSCI intellectual property may not be reproduced, disseminated or used to create any financial products, including any indices. This information is provided on an "as is" basis. The user assumes the entire risk of any use made of this information. MSCI, its affiliates and any third party involved in, or related to, computing or compiling the information hereby expressly disclaim all warranties of originality, accuracy, completeness, merchantability or fitness for a particular purpose with respect to any of this information. Without limiting any of the foregoing, in no event shall MSCI, any of its affiliates or any third party involved in, or related to, computing or compiling the information have any liability for any damages of any kind. MSCI, Morgan Stanley Capital International and the MSCI indexes are services marks of MSCI and its affiliates. The Firm accepts no liability whatsoever for the actions of third parties. The Product may provide the addresses of, or contain hyperlinks to, websites. Except to the extent to which the Product refers to website material of the Firm, the Firm has not reviewed the linked site. Equally, except to the extent to which the Product refers to website material of the Firm, the Firm takes no responsibility for, and makes no representations or warranties whatsoever as to, the data and information contained therein. Such address or hyperlink (including addresses or hyperlinks to website material of the Firm) is provided solely for your convenience and information and the content of the linked site does not in any way form part of this document. Accessing such website or following such link through the Product or the website of the Firm shall be at your own risk and the Firm shall have no liability arising out of, or in connection with, any such referenced website.

ADDITIONAL INFORMATION IS AVAILABLE UPON REQUEST